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Publications

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Sessional papers

90112

SESSIONAL PAPERS.

VOLUME XVI.—PART III.

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FIRST SESSION OF THE FIFTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO.

SESSION 1884.

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No. 22.. Return shewing the number of members of each County Council in the Province, the number of such members representing Towns, Villages or Townships respectively, and the assessments of each such Town, Village or Township. *(Not printed.)*

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No. 43.. Return of copies of all correspondence between the Government of Ontario, or any member thereof, and the Government of Canada, or the Government of Quebec, or any members thereof, respectively, subsequent to that already brought down, relative to a settlement of the outstanding accounts between the said Governments, or of the Land Improvement Fund.

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No. 45.. Return shewing the municipalities that have passed by-laws limiting the number of Tavern Licenses since January, 1876; the municipalities that have passed by-laws restricting the number of Shop Licenses since January, 1876; the municipalities that have passed by-laws restricting Shop License holders, so as to confine the business of such shops solely and exclusively to the keeping and selling of liquor, or which have imposed restrictions other than that imposed by Statute on such, since January, 1876.

No. 46.. Return shewing the amount expended by the several municipalities in the years 1871, 1872, 1880, 1881, and 1882, designating, as far as possible, the different services for which such expenditure was made, and also the amounts received by the municipalities in the same years, and for the years 1874 and 1875, from liquor licenses, and also from fines for breach of license laws or liquor license by-laws for the same years. *(Not printed.)*

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No. 49.. Return of : 1. Copies of the Writ of Election for the holding of the last Election for the Electoral District of Algoma. 2. All instructions to the Returning Officers. 3. All Correspondence between the Returning Officer and any Member or Officer of the Government. 4. All Orders in Council fixing the places for opening and holding Polls at the said Election. 5. All Petitions or applications to His Honour with reference to the fixing of such places or the changing of the places so fixed. 6. All Communications between any Member or Officer of the Government and any other person, with reference to the fixing or changing of such places. 7. All requisitions or applications made to the Returning Officer with reference to the fixing of such places or adding to the number of them. And for a statement shewing the Polling Places fixed by Statute, and at which such places Polls were not opened and held. And for a copy of the Return made by the Returning Officer.

No. 50.. Return of all correspondence, reports and papers connected with the dismissal of John McEwen, Esquire, from the office of Sheriff of the County of Essex, and of the appointment, in his place and stead, of John C. Iler. *(Not printed.)*

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No. 52.. Correspondence between the Government of the Province of Ontario and the Government of the Dominion of Canada, with reference to the case of the Queen *vs.* Hodge, and the Dominion Liquor License Law.

No. 53.. Statement shewing what timber cut in the disputed territory, outside the railway belt, has been seized by or under the instructions of the Government, and the names of the persons, firms or companies in whose possession the timber seized was at the time of its seizure; the approximate quantity affected by each seizure, and whether such seizures (if any) are still maintained, and, if so, in what way. 2. A statement shewing in detail the receipts since 1st June, 1883, for the dues in respect of timber cut in the disputed territory, and the person by whom the dues were paid. 3. Copies of all instructions given to Mr. Aubrey White in respect of such timber, and of all correspondence between him and any Member or Officers of the Government between the 1st of June, 1883, and the 1st day of January, 1884.

No. 54.. Return shewing in detail all sums claimed by or allowed to Returning Officers, Deputy-Returning Officers or other persons, for services and expenses in connection with the last Election in the District of Algoma. *(Not printed.)*

No. 55.. Report of the Bureau of Industries for the year 1883.

No. 56.. Copies of the Commissions issued to George R. Pattullo and George Burden, the Commissioners appointed in connection with the disputed territory. 2. Copies of the instructions issued to Commissioners. 3. Copies of all communications which have passed between the said George R. Pattullo and George Burden, or either of them, and any member or officer of the Government, from the date of the appointment to the 1st day of January, 1884. 4. Copies of all Orders in Council passed with reference to the appointment of Commissioners or their duties, or otherwise in relation to their transactions.

No. 57.. Return of copies of all correspondence with the Government, or any member thereof, relating to the project of establishing an International, Dominion or Provincial Park at Niagara Falls. *(Not printed.)*

No. 58.. Report of the University of Toronto for 1882-3. *(Not printed.)*

No. 59.. Return shewing the total amount expended for repairs of the Parliamentary and Departmental Buildings, and for rents and repairs of temporary offices, since the 1st day of January, 1880.

No. 60.. Return of copies of all correspondence, petitions or memorials, respecting the appointment of Stipendiary Magistrates and Division Court Judge for the Provisional County of Haliburton; also, copies of all correspondence, petitions, resolutions, memorials, or other papers forwarded to the Government, or any member thereof, relating to the said appointment, either prior to or since said appointment was made, with dates of each communication respectively. *(Not printed.)*

No. 61 First Report of the Inspector of Legal Offices for the year 1883.

No. 62.. Statements and Returns of the Toronto General Trusts Company for the years 1882 and 1883. *(Not printed.)*

No. 63.. Return of copies of all correspondence and memorials respecting the appointments of Police Magistrates in the Villages of Merrickville and Cardinal. Copies of all correspondence between the head of the municipality of the Town of Prescott, or any member of the Council thereof, or of any other person, with the Honourable The Attorney-General, or any member of the Government, relating in anywise to the appointment of a police magistrate for the said Town of Prescott; and of all petitions, resolutions, memorials or other papers forwarded to the Government or any member thereof, relating to the said appointment, either prior to or since said appointment was made, with dates of each communication respectively. *(Not printed.)*

No. 64.. Return of copies of all correspondence between the Government, or any member thereof, and the representatives of the various municipalities bordering on Lakes Simcoe and Couchiching, or any other person or persons, together with all reports and papers (not already brought down) on the subject of removing the obstructions from the Severn River, near the outlet of Lake Couchiching, whereby the waters of Lakes Simcoe and Couchiching would be lowered and a large quantity of land reclaimed. *(Not printed.)*

No. 65.. The Bursar's Statement of cash transactions of Upper Canada College, for the year ended 30th June, 1883. *(Not printed.)*

No. 66.. The Bursar's statement of cash transactions of the Toronto University and University College, for the year ended 30th June, 1883.

No. 67.. Statement of the amount of Fees and Emoluments earned, and disbursements made by County Crown Attorneys of the Province of Ontario, for the year ending 31st December, 1883, in accordance with the provisions of 43 Victoria, Cap. 3, Sec. 2, Statutes of Ontario.

No. 68.. Statement of the amount of Fees and Emoluments earned, and disbursements made, by Clerks of the Peace of the Province of Ontario, for the year ending 31st December, 1883, in accordance with the provisions of 43 Victoria, Cap. 3, Sec. 2, Statutes of Ontario.

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No. 70.. Return of all correspondence and papers in connection with the refusal of a license to Mr. Bradley of the Lambert Hotel, Port Hope. *(Not printed.)*

No. 71.. Return shewing:—1. The specifications for the Gaol at Rat Portage. 2. Estimates of the cost of its construction. 3. The tenders, if any, received for the work to be done or any part of it. 4. All reports upon the tenders received. 5. A statement shewing what part, if any, of the work was done under contract. 6. A statement shewing, under proper heads, the expenditure incurred in erecting said Gaol, with the names of the persons paid. 7. A statement shewing the amount, if any, yet unpaid on account of the cost of constructing said Gaol.

No. 72.. Copies of all correspondence between the Governments of Ontario and Quebec, or any member or officer thereof, relating to, or containing the agreement come to between the said Governments, whereby the boundary between the Provinces of Upper and Lower Canada, now respectively named the Provinces of Ontario and Quebec, north of Lake Temiscamingue, which have never been authoritatively determined, was agreed to be determined in the manner enacted and set forth in the Act, Chapter three, of the Consolidated Statutes of Ontario, but subject also to ratification by the Legislature of the said Province of Quebec, and by the Parliament of Canada. And also copies of all correspondence between the Government of the Province of Ontario, or any member or officer thereof, and the Government of the Dominion, or any member or officer thereof, with regard to the said boundary, and with regard to the ratification thereof by the Parliament of Canada.

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No. 75.. A statement shewing in detail all moneys expended in, or in connection with, the disputed territory or its government, since the 1st of June last, shewing the persons to whom such moneys were paid, and the purposes for which the same were expended. 2. A like statement as to the pecuniary liabilities incurred for the like purposes, and which have not yet been discharged. 3. A statement shewing in detail the number of Constables and Peace Officers employed by or on behalf of the Province since 1st June last, in the disputed territory, such statement to contain a record of the number employed each day, and to shew the amount of the daily expenditure for such service. 4. A statement shewing in detail the sums of money remitted to any person since 1st June, 1883, to be expended in the disputed territory, and the persons to whom, and the purpose for which, the same were sent. 5. Copies of all instructions given with regard to the conduct or management of the Police Force and their duties.

No. 76.. Abstract of Returns of Receipts, Expenditures, Assets and Liabilities for the year 1882, of the Municipalities of the Province, made by clerks of Municipalities pursuant to 43 Victoria, cap. 24, sec. 6, with the population of each Municipality.

No. 77.. Copy of the judgments of the Judicial Committee of the Privy Council, delivered in the cases of Russell *vs.* The Queen, and Hodge *vs.* The Queen.

No. 78.. Return shewing the amount paid to each railway out of the funds of this Province up to December 31st, 1883; also, the number and total amount of unpaid certificates that each of the aforesaid railways are entitled to. And, also, the railways which are entitled to aid under any of the enactments of the Province, but, to which no money has, as yet, been paid; such Return to shew the total amount they are entitled to, either by a direct payment or by certificate; also, to shew the total amount payable in each year.

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No. 81.. Copies of all correspondence between the Government of Ontario, or any member thereof, and the Government of the Dominion, or any officer thereof, respecting any claim for arrears or annuities due to the Indians, or the Dominion on behalf of the Indians, under Treaties for the relinquishing of Territorial rights on the shores of Lakes Huron and Superior, known as the "Robinson Treaties."

No. 82.. Return of copies of all correspondence and communications between the junior Judge of the County of Ontario, or any other person, and the Attorney-General, or any member or officer of the Government, with regard to the conduct of one J. P. Foley, Esquire, of Mara, one of the Justices of the Peace for the said County. *(Not printed.)*

No. 83.. Report of the Department of Immigration for the year 1883.

No. 84.. Return of copies of all Orders in Council, or departmental regulations, with regard to the powers or duties of the Public School Inspectors as to changes in the text books in use in the schools within their Inspection Districts, and of all circulars issued by the Department of Education with reference to such powers, or duties, or the authority under which such changes should be made.

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No. 87.. Return of all correspondence, lease and papers connected with the leasing of a part of Rondeau Point to the Messieurs Weldon. *(Not printed.)*

No. 88.. Return of copies of all correspondence and communications with or by the Attorney-General, or any member or officer of the Government, and any other person, and all reports and Orders in Council with reference to the removal from the office of Police Magistrate of Port Perry, of John Nott, Esquire. *(Not printed.)*

No. 89.. Return of copies of all general rules and orders made by the judges since the passing of the Ontario Judicature Act, and all general rules and orders made by the Court of Appeal.

No. 90.. Return of all correspondence between the Executive of the Lambton Prohibitory Association and the Provincial Secretary, or any other member of the Government, with regard to the appointment of a License Officer at Petrolea. Also, copies of all communications and correspondence between the Government, or any member thereof, and any other persons, with reference to such appointment. Also, copies of all correspondence between the License Commissioners for West Lambton and any other person, or body, with regard to such appointment. Also, copies of any recommendations made to the Executive Council, with reference to such appointment, and of all Orders in Council relating thereto. *(Not printed.)*

No. 91.. Return of a copy of the circular issued from the Attorney-General's Department, bearing date on the 14th day of January, 1882, with respect to the efficiency or otherwise of the present system of detecting crime and bringing the offenders to justice, with the answers to the circular, and any other correspondence on the subject.

No. 92.. Return shewing the names and residences of the members now comprising the Central Committee of Examiners. The dates of their several appointments. Copies of all Orders in Council or Departmental Regulations defining the powers and duties of the Committee. Copies of the minutes of the proceedings of the Committee, except those relating to examinations since first day of January, 1882. Copies of all recommendations made by the Committee to the Minister of Education, or the Government, upon any matter upon which they have made recommendation. *(Not printed.)*

No. 93.. Return of copies of all Orders in Council, Departmental Regulations or instructions, with regard to the use of Text Books in the Normal and Model Schools since 1867.

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No. 95. Return shewing, from the institution of the office, the dates at which the Reports of the Inspector of Insurance Companies have been laid upon the Table of the House, and the year for which such statement was prepared. And that a corresponding statement be submitted, giving like dates and years, with regard to the similar Reports respecting Insurance Companies made to the Parliament of the Dominion, by their like officer.

No. 96.. Return of copies of all Petitions from Municipal Corporations, praying for the investigation of the Financial Standing of said Corporations, and also, all correspondence between the Government and said Corporations, in regard thereto. *(Not printed.)*

No. 97.. Return of copies of all communications between the Senate of the University of Toronto and the Government, on the subject of further State Aid to the University.

No. 98.. Copy of certain Resolutions passed as to a meeting of the graduates and other friends of Queen's University, Kingston, resident in that city, and held on the fourth day of March instant. *(Not printed.)*

No. 99.. Return giving:—1. The names of the officers and directors of the Muskoka Slide Dam and Boom Company, and a copy of the Charter of the said Company. 2. Copies of all correspondence (if any) with reference to the transfer to the said Company of the whole, or any part of the Muskoka River works, or the fixing of the tolls to be taken by the said Company. 3. Copies of the tariff of tolls adopted by the said Company, or approved of by the Lieutenant-Governor in Council. 4. A statement of the amounts expended in each year since Confederation on such part of said works. *(Not printed.)*

No. 100. Return shewing in each and every year since 1871, inclusive, the amount of money paid by the teachers of Ontario into the Superannuated Teachers' Fund; the amount paid out by the Government to superannuated teachers; the amount in each year paid out in excess of the amount paid into said fund; the total amount paid out of said fund; and the amount of the latter over the former. And the amount paid out to teachers who have withdrawn from the fund during the same period.

No. 101. Return shewing the names of the persons to whom, the prices for which, and the dates when the water fronts or lots, at or near Prince Arthur's Landing, were sold or disposed of. Also, a Return shewing in which of the grants any of the said water lots or fronts a reservation is made of a right of way for the Canadian Pacific Railway. And also, a map or sketch, shewing the position of each of the said water fronts or lots sold or disposed of, specially with reference to the streets of Prince Arthur's Landing. *(Not printed.)*

No. 102. Return shewing in detail the municipalities which have borrowed from the Province under the provisions of the Tile Drainage Act and Municipal Drainage Act; the date of the loans; the amounts borrowed; the terms of payments of the debentures purchased by the Province; the amounts paid on account thereof for principal and interest, shewn separately; the amounts remaining unpaid for principal and interest, shewn separately.

No. 103. Statement shewing the amount of money on deposit in the Banks, or other moneyed institutions, to the credit of the Province on the first days of January, February and March, 1884, respectively, whether in the Province or elsewhere, giving the name of each Bank or other institution wherein these moneys are deposited, and the amount in each, respectively. Also, the amount at interest in each Bank or other institution, and the rate of interest allowed in each case on said deposits; and the amount available on call without interest in each Bank or elsewhere, with their names in each case.

No. 104. Return shewing the respective amounts paid by such Municipalities in the Province of Ontario in which the Dunkin or other Temperance Acts are in force, towards the License Fund of the District in which they are situated.

No. 105. Return shewing:—1. The several lots in the Townships of Tudor, Wollaston, Limerick and Faraday, in the County of Hastings, which have been sold, located, disposed of or applied for since January 1st, 1880. 2nd. The dates of said sales; the persons to whom sold; the prices paid and terms of payments. 3rd. The dates of the several applications for the purchase or location of said lots.

No. 106. Report of the Secretary and Registrar for the year 1883.

No. 107. Return of copies of all instructions given to, and reports and correspondence from, the "Consulting Board" or other persons, with reference to the erection of three Public Creameries provided for in the Estimates for 1883, and a statement of all moneys paid to or still due any member of such Board, or other person, for his services in connection therewith.

No. 108. Return shewing the names of all prisoners in the Central Prison, who, during the year 1883, were punished for infraction of the Prison Rules, giving the date and nature of such punishment. A copy of the Surgeon's Certificate or Report, in reference to prisoners who were punished during the year 1883 in the Central Prison. The names of all prisoners who were sent from the Central Prison to the Asylum for the Insane during the year 1883. *(Not printed.)*

No. 109. Return shewing what lands in the District of Algoma (including the Disputed Territory), have been sold or disposed of since the first day of January, 1882; with the names of the persons to whom such lands were sold, and the price *per* acre paid or agreed to be paid therefor, and how much of it still remains unpaid, and, so far as practicable, the names of persons by whom such lands are now owned or held. *(Not printed.)*

No. 110. Return of copies of all Orders in Council passed under the authority of the General Mining Act creating, extending, adding to, or diminishing mining divisions. *(Not printed.)*

No. 111. A Statement shewing in detail all claims brought before the Commissioners appointed in the Disputed Territory (Messrs. Pattullo and Burden), or either of them; the dates when they were made, and the disposal made of them by the Commissioners, and when such disposal was made. 2. A statement in detail of all expenditures for salaries and otherwise in connection with the Commission issued to them. *(Not printed.)*

ANALYSIS OF REPORTS

OF THE

Agricultural & Horticultural Societies

OF ONTARIO,

FOR THE YEAR 1882.

Printed by Order of the Legislative Assembly.

Toronto:
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1884.

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ANALYSIS OF REPORTS

OF

Agricultural and Horticultural Societies,

FOR THE YEAR 1882.*

BRANT, NORTH.

The President and Directors of the North Brant Agricultural Society beg leave to present their Report for the past year.

In the first place, we can say we have decided the question of grounds, by purchasing the land used by the Society for years past; and, although small, it was the opinion of a large majority of the Board that it was the best that could be done, as the buildings were on it, and it was already fenced. The price of the land was $1800, which has all been paid.

A grant of $500 was offered by the Council of the town of Paris to aid in paying for the land, on condition that they get a lease of the same for a term of ten years, which was accepted by the Board, and approved of (as required by sec. 37 of the Agriculture and Arts Act) at a public meeting of members, held on the 27th of July last.

Grants of $100 were received from each of the Councils of South Dumfries and Brantford Townships, also the usual County grant of $200.

A Spring Exhibition of horses and cattle was held on the 14th of April, which was as well attended as in former years.

The Fall Exhibition was held on the 3rd and 4th of October, and we can safely say was the most successful one ever held in the Riding, both in exhibits and in attendance.

The receipts at the Fall Exhibition amounted to $494.90, being $117.17 more than those of last year, and that with the sum of $56 of membership fees over those of the preceding year shows that the interest in the Exhibition is yearly increasing.

The entries of stock and produce may be enumerated as follows, viz.:—Horses, 333; cattle, 110; sheep, 191; pigs, 56; poultry, 178; grain and seeds, 55; dairy products, 75; roots and vegetables, 206; plants and flowers, 167; fruits, 176; carriages and implements, 76; harness and leather, 6; ladies' work, 226; mechanical work, 27; extras, 48; in all 1,933, being 110 more than those of last year.

In conclusion, we would suggest to the incoming Board that they use all the means in their power to improve the grounds at as early a day as possible.

Onondaga.

Your Directors beg leave to submit the following report of our Association's proceedings for the year past, and in so doing we have nothing unusual to state. It does not

* The names of Electoral District Societies are arranged alphabetically and printed in capitals, with their respective Township and Horticultural Societies in italics. A condensed financial statement of each Society is given in a tabulated form.

appear that any improvement has been made in the general standing of our Society, still there does not appear to be any inclination to abandon it. The amount received from members' subscriptions is less than we had expected, is less than that of last year, and consequently we have not had it in our power to offer increased inducements to exhibitors. However, if in point of numbers the exhibits in general have not been so great as heretofore, still in horses, cattle and sheep the quality has been excellent. We cannot speak so highly of that of grain and roots, vegetables and fruits, while in implements the show was very poor indeed. We present herewith our financial statement, by which it will be seen that after paying off the prize list in full, and also our ordinary expenses, we have a balance on hand.

BRANT, SOUTH.

Your Directors, in submitting this their Annual Report of their proceedings for the past year, regret that their efforts to make the Southern Fair a success have to a certain extent failed, and this result your Directors have no hesitation in saying is wholly attributable to the apathy or indifference of the farming community of the County of Brant, and the citizens of Brantford.

During the year the sum of $399.42 has been expended by the Buildings and Grounds Committee in removing buildings and improving the Society's grounds.

The Exhibition, from the number of entries made, bade fair to be a most successful one; but, for some reason unknown to your Directors, many of the articles entered were not exhibited.

The show of horses was good, but in numbers not quite up to that of last year. The show of cattle was also very good, and noticeable in this class was a very fine herd of grades, shown by Mrs. Laycock, of Brantford Township. In the sheep department the number of entries was not up to the average, but they were of superior quality. The same may be said of the show of pigs. The show of poultry was very fine, being more than double that of last year.

Your Directors cannot report favourably of the show of carriages and agricultural implements, owing to the want of enterprise of local manufacturers.

The number of entries in the grain department was below the average, but some very fine samples were shown. The number of entries in the fruit, root and vegetable departments was considerably in excess of last year.

The show of dairy products was slightly in excess of last year, butter being shown in large quantities.

In the manufacturers' and ladies' departments the number of entries was considerably in excess of last year.

The show of fine arts was not quite up to the average, but some very fine specimens were exhibited.

The show in the harness department was very fine, but in this department there was no competition.

Your Directors regret to state that the reason for so large an expenditure by the Buildings and Grounds Committee was the falling down of the carriage building, during a heavy wind, which necessitated an expenditure of over $200 for removing and rebuilding same.

Your Directors also regret to state that the receipts from the grounds during the year were far below the receipts of the previous year, and much less than estimated.

Your Directors, upon retiring from office, would offer the following suggestions for the guidance of their successors, viz.:—

That the show be confined to two days; that the grounds be rented to a private party for the highest sum obtainable, the Society reserving the right to use the same for one week during the holding of the Fair; that an eating booth be supplied on the grounds during the Fair, as several complaints were made by persons who were forced to go out for their dinners, and pay a second time to enter the grounds; that if the grounds are held by the

Society, no horses be allowed in the stables or grounds except during the Fair, or by the owners paying a reasonable rent for the stables; that member's tickets be $1, for the privilege of entering for exhibition, and that no gate tickets be given in exchange for the same. * * * *

DURHAM, WEST.

Your Directors beg respectfully to submit a statement of receipts and disbursements of the united Societies for the past year, from which it will be seen that the operations of the year have been fairly successful. There has been an increase of nineteen in the membership, and of $216 in the receipts from all sources over the preceding year. But strange to say, the entries at the Fall Show fell about 500 short of those of the preceding year.

It will be remembered that there was a deficit of $152 on the operations of the year 1881, occasioned by the unfavourable state of the weather during the Fall Show of that year. The receipts for the last year were about sufficient to meet all ordinary demands, and to pay off that debt. But it was deemed advisable to expend $100 on the Exhibition Buildings, and to make a contribution of $29.70 to the funds of the Central Exhibition, in consequence of which there is still a deficiency of $147, which your Directors hope their successors will be able to wipe out. This deficit is due the Treasurer, who, with customary generosity, has advanced the funds necessary to meet all claims against the Society.

The Horticultural Societies of Bowmanville and Newcastle appear to be both defunct. The Clarke and Cartwright branches, your Directors believe, are in a highly efficient condition.

The Central Exhibition for this district, formed eight years ago, appears to have been working unsatisfactorily of late, and communications will be submitted to you, asking you to take some action in relation to that matter at this meeting.

The union of your two Societies continues to work to the entire satisfaction of all concerned, and your Directors recommend that the union be continued during the present year.

Clarke.

Your Directors, in again submitting an account of their proceedings during the past year, humbly acknowledge our thankfulness and gratitude to our great and bountiful Benefactor in crowning the year with plenty; we acknowledge Him in all our ways, knowing that His loving kindness extendeth to all creatures.

The progress of the Society for the year closing has been satisfactory, which an exhibit of its affairs, and the statement of receipts and expenditure, as audited, will exemplify.

That in reviewing the workings of this Society from its formation to the present, we find but one feeling prevailing among those entrusted with its management, and that is to keep at all times within the limits of the grants received, and sums paid for membership. We have again to acknowledge the liberality of the Township of Clarke, as also of the Village of Newcastle, in extending the usual grants towards our funds. We would be pleased to report a more growing interest manifested by agriculturists.

In our last Annual Report we laid before you the desirability of giving prominence to one particular article of export, namely butter, which article has lately been brought into disrepute in consequence of careless handling, and other causes unnecessary to allude to. We are, however, pleased to observe that our and others' observations, relative to that commodity, has drawn the attention of the Commissioner of Agriculture to that matter. At their last meeting in December the following resolution was adopted by the Board, and the Secretary requested to transmit the same to the Commissioner of Agriculture:—

"That this Society recognize the interest taken by the Hon. S. C. Wood in endeavouring to develop the interests of agriculture; following up the establishment of a Bureau, by offering substantial aid in the promotion of creameries in central sections of the Province—a much felt want, and urgently desired. That although our township can,

without egotism, boast of having some of the best butter-makers in Ontario, we cannot but feel aggrieved at the stigma pronounced against all Canadian butter, in consequence of its careless and improper handling prior to its finding a market. That the development of this industry, by the establishment of creameries, would add much to the wealth of the Province, and its recognition by the Government of Ontario is an assurance to the agricultural community that their interests are not overlooked. That while recognizing the propriety of the Commissioner of Agriculture in first laying the subject-matter before the Provincial Agricultural Society, they do not lend their endorsement as to its being a truly representative body, and would recommend, in so far as the location of creameries contemplated to be established, the location thereof be left in the hands of the Executive, believing that any claim put forth by this section will have due weight, and in the furtherance of the promotion of a Model Creamery, a sum equivalent to any grant made by the Government will be guaranteed, thus showing our desire as a Society to reclaim the character of an article of the highest value in commerce, and an important factor in the wealth of the Province, hereafter setting at rest the true character Canadian butter should hold in the markets of the world."

Your Directors are further impressed with the conviction that in a county like this, wherein a market is to be found for every product the soil produces, it should be our province to place upon record the fact that the greater part of the perishable products are brought in from a neighbouring territory after paying duty.

We are slow to recognize the appliances of modern science as to utilizing our perishable commodities. The last season is a striking example. Our fruit crop, which promised a superabundance, was with one fell blast nearly annihilated, and that which raised the hopes and prospects of those who built thereon in one night were cast to the winds. Had we had in our midst a manufactory for evaporizing fruit, thousands of dollars could have been saved in this county.

We therefore urge upon the Society the necessity of encouraging in every way the establishment of creameries, evaporating the fruit of our orchards, and also perishable fruit preserving industries, believing that in so far as an agricultural society lends its support to the establishment of such industries, in like degree they are advancing the interest of agriculture, benefiting themselves, and adding to the material wealth of the country.

Our Fall Show financially was a success, although the number of entries showed a slight decrease. The meagreness of display in grain and seeds is attributable to the lateness of the harvest. In all other classes the display was good, and fully up to former years. * * * *

ESSEX, NORTH.

The Annual Exhibition of the Society was held, united with the Colchester North Agricultural Society, in the Village of Essex Centre, on Tuesday, Wednesday and Thursday, the 26th, 27th and 28th days of September last; and when we take into consideration all the difficulties we had to contend with, we consider that the Show was a grand success. It has been the wish of some of your Directors for some years past to hold the Fair for three days in succession, and they succeeded at the last exhibition of testing that plan, and now are satisfied that two days in succession is long enough to hold a Fair in this county.

The date of holding the Fair was rather early—some of the products of the farm were not ripe enough to put on exhibition, while many of the farmers had not their threshing done; while at the same time they were engaged in ploughing for and sowing Fall wheat, cutting their corn, and threshing their grain. These and other causes, to a certain extent, militated against the success of the Fair, and prevented as many entries being made as might reasonably have been expected under more favourable circumstances.

The weather was favourable the first day of the Fair, whilst light rain fell on the second day, and the third day was as fine as could be desired.

The receipts at the gate during the three days amounted to the neat sum of $358.35.

The accommodation afforded the Society by the Colchester North Agricultural Society was the best in the County of Essex, and when that Society has succeeded in erecting all the buildings and sheds which they have under contemplation on their beautiful fifteen acres of show grounds, their accommodation will be second to none in Ontario for exhibition purposes.

In addition to their large and commodious exhibition hall and carriage sheds, there were long rows of covered stalls and sheds, where horses, cattle, sheep and swine were protected from the rays of a scorching sun or from autumn storms.

The show of horses was not so large as has been seen at some of the previous Shows in this or the South Riding.

It was remarked by some persons at the Fair that the prevalence of pink-eye among the horses in some parts of this county had something to do with keeping horses from the Exhibition. However, those which were shown, especially in the draught class, showed a marked improvement over those shown at former Fairs in this county. Farmers are beginning to awaken to the necessity of breeding heavier horses for farming purposes, and of discarding their old-fashioned stock of mongrel ponies. This was plainly visible in the young animals shown at Essex Centre in September last.

The number of horned cattle on exhibition was smaller than usually seen at our Fairs, but what was shown were superior in quality to any ever shown at our former Fairs in this county. Durhams and Grades were in the majority, and all were in good condition, and showed that they were not neglected.

In the sheep class the number of entries was not quite so large as that of last year, but the animals shown were pronounced by good judges to be superior to any shown at our Fair last year. There is a marked improvement in sheep shown at our Fairs each succeeding year, and we are of opinion that sheep-raising is destined to become one of the leading industries of the Essex farmer.

The show of hogs was not large, but was composed of the finest specimens ever seen in this county. Suffolk, Essex, Berkshires, and Poland China were the principal breeds shown.

In the poultry class there were 53 entries, which embraced a large number of breeds of fowls.

In grain and seeds, the quantity shown was small, but considering the unfavourable season the samples were very good, and quite up to the average seen at previous Fairs in this county.

There were 55 entries in roots and vegetables. The quality of the roots were superior to any before seen at a Fair in Essex, and the same may be said of the vegetables.

The fruit crop might well be considered a failure in Essex last year, especially the apple crop ; although there were several very fine samples shown at our Fair last Fall.

The show of dairy products and provisions was very good, especially in the butter corner, which was well filled with very choice samples.

The department of wool and leather was not well represented in quantity, but the quality of the goods in that class was very superior.

In the class of home manufactures of wood, tin, iron, etc., there were 71 entries, and the exhibits in this class showed a great improvement in the art of manufacturing, and in the quality of the material used.

In the ladies' work department was made the greatest number of entries of any at the Exhibition, and the keenest competition was here shown. In this class there were 156 entries, and the amount paid in prizes was $28.75.

There were many useful articles of art and manufacture exhibited for which the Society had offered no prize, but some of them were awarded special prizes, which were offered by individuals independent of the Society.

It is to be hoped that the Directors of the South Riding Agricultural Society, whoever they may be, will see the advisability of amalgamating their funds with those of the North Riding Society, and of holding a grand Union Fair at Essex Centre next Fall. Essex Centre being situate in the centre of the County of Essex, and available by rail from nearly every portion of the county, must be a very desirable and proper place for holding a Central Fair.

Maidstone and Sandwich.

This Society held no Exhibition, but mainly devoted its funds to the purchase of superior male animals for the improvement of the live stock of the locality. This object has been pursued by some other societies, and when managed with judgment and energy has been found exceedingly beneficial to this important department of the farming interest.

This Society had on hand five Shorthorn bulls of good pedigree, and three first-class boars of the Suffolk breed. The practice is to sell occasionally these male animals and supply their place by new blood; and it is found that by using pure-bred males with selected females of grade cattle the usual results are highly satisfactory, especially for the production of meat both as to quantity and quality.

ESSEX, SOUTH.

The annual Exhibition of the Society for 1882 was held in the Town of Amherstburg on the 3rd and 4th days of October. The show was in all respects a decided success—creditable alike both to the exhibitors and to the South Riding. The total number of entries made was one thousand and fifty, a slight decrease on those made in the years 1879 and 1880; but the extremely bad year for fruit, and consequently the small number of entries made in this class, would account, in our opinion, for the decrease.

The show of live stock was very good, especially that of sheep which was the best that had ever taken place in the county; seed, grains and roots were exceedingly good; fruit was deficient; the display of dairy products was most excellent: that of home manufacturers would compare favourably with other years; while the display of ladies' work was ahead of any shown in previous years. In addition to the regular prizes offered by the Society a large number of special prizes were given by the business men of Amherstburg, the obtaining which was keenly contested for by various competitors.

It will be remembered that a deputation, appointed by a meeting held at Essex Centre, attended the last annual meeting of this Society and advocated the desirability of holding a Union Fair at Essex Centre by the two Riding Societies. The matter was taken into immediate consideration by the Directors, and a deputation of the whole Board was appointed to meet the Directors of the North Riding and North Colchester Societies at Essex Centre to consider the expediency of holding a Union Fair, and to agree upon a basis of union. The deputation, consisting of six members of the Board out of the twelve, on the day appointed met the representatives of the North Riding and North Colchester Societies, and after considering and discussing the matter of union, could come to no understanding. The terms proposed by your representatives, which we considered fair to all parties, were rejected by the North Riding and North Colchester Directors; and the terms proposed by them were rejected by us as preposterous and unfair. The matter for the time being then dropped.

At our June meeting the question of union was again revived by a communication from the Secretary of North Colchester Society expressing their willingness to accept our terms, and also by a gentleman appearing on behalf of North Colchester Society; but as he acknowledged that he had no authority to act on behalf of the North Riding Society, his overtures were rejected by your Directors.

Your Directors expressed themselves as not being adverse to holding a Fair at Essex Centre upon the usual conditions, but they strongly objected to unite with the North Riding Society. It was then ascertained that arrangements had been made between the North Essex and North Colchester Societies to hold a Fair at Essex Centre, whether we would unite with them or not.

We have had the novel and unprecedented spectacle of having two Riding Fairs in the South Riding of Essex for 1882. The North Riding Society, uninvited and unsolicited by this Society, came down from their haunts, invaded a part of our territory, held their show within its borders, and returned again ladened with spoils to their homes, rejoicing

over the bloodless victory they had gained, and ready to exclaim with the "Heroic Roman,"

"No pent-up NORTH ESSEX can contract our powers—
The whole boundless continent is ours."

And all this at the solicitation of a recently organized local Society of a few months' standing, composed of a handful of members barely sufficient to constitute its legality.

We very much question the legal right of one Society to enter within the limits of another, interfering with its rights and privileges by taking away from it that support to which it is entitled; and we feel confident that if this matter had been properly represented to the proper authorities the Legislative Grant would have been withheld. But apart from the legal aspect of the case, common sense should have taught them that they were wrong, and common courtesy should have restrained them from interfering with the privileges and rights of a sister society in the manner they have done.

We are led to rejoice at the prosperity of the county through an abundant harvest during the year. The Fall wheat crop has been an abundant one, the yield far above an average, and generally of fair quality. Owing to the cold and backward spring, the spring crops were retarded in their growth, so that the grain was not as heavy nor the yield as great as could be desired.

Corn had a backward start in the spring and early summer, and the farmers at one time despaired of having any crop at all, but owing to the late and favourable fall weather the crop came out exceedingly well and ripened to perfection: so that the hearts of the farmers were made to rejoice with glorious visions of fat pigs and well-filled wallets.

The prices for farm products have been on the whole remunerative. The farmers did not get as high a price for wheat as they desired (they never do!); but still with such an abundant crop they might feel very thankful that the prices were as good as they have been. The prices for oats and corn are very fair, and extremely high rates have been and are now being paid for pork as it is brought to market.

In conclusion, we think that a feeling of intense gratitude and heartfelt thanks should prevail towards the Giver of all Good for the bountiful blessings granted to us during the past year; and while we enjoy and partake of those blessings, let us not forget to perform the duties required of us toward Him as our Benefactor, and towards our less fortunate fellow-beings.

GRENVILLE, SOUTH.

The President and Directors of the South Grenville Agricultural Society most respectfully beg to submit this, their Twenty-fourth Annual Report, to the members of the Society and the general public, and in doing so would express our gratitude to the Great and All-wise Being for the bountiful harvest of the past year, and for the general prosperity of the country at large.

The Twenty-fourth Annual Exhibition was held on the Society's grounds at Prescott on the 26th, 27th and 28th of September, and proved a grand success beyond our most sanguine expectations.

Your Directors are gratified at the renewed interest manifested in the success of the Society by the inhabitants of our own county, as well as by those of the neighbouring counties. Your Directors adopted during the past year a more extended system of advertising than formerly, and are happy to say with the most gratifying results. The attendance of visitors during the Exhibition was very large, more particularly on the second day, when the grounds and buildings were literally crowded from morning to night, and notwithstanding the excessive crush and crowding that continually prevailed throughout the day not the least unpleasantness occurred. The respectability and intelligence that characterized the immense throng of visitors must have been suggestive, even to the most superficial observer, of the high standing of the agricultural community of this district.

The very large number of entries in the various classes and the excellence of the samples on exhibition proved conclusively that the weather during the past summer must have been most favourable to the production of all kinds of farm produce.

Of horses, a very large number were shown, embracing some handsome and valuable animals. The show of cattle was very creditable, embracing some highly-bred animals. Sheep and swine, though not numerous, were of a very superior class. The collection of poultry was very fine. In agricultural implements the display was very creditable. The show of fruit was the best ever seen in this section of the country, and would compare favourably with any exhibition in Canada. The entries in grain, roots and vegetables were very large and the samples on exhibition were of a superior quality, and proved a source of great attraction to the large attendance of visitors.

The excellence of the butter and cheese on exhibition caused the judges no little trouble in selecting the prize packages.

The Floral Hall was the centre of attraction to the lady visitors, the assortment of ladies' work and domestic manufacture being very large. In the Floral Hall there were also a large number of pianos, organs, sewing machines, etc., etc., as well as a number of artistically arranged cases of goods by Prescott merchants.

In short we might say that each and every department of the Exhibition was filled to its utmost capacity. * * * *

Your Directors in presenting their Annual Report would be but indifferently performing their task did they not record in a special manner their hearty thanks to W. T. Benson, Esq., M.P., for his very liberal donations in the form of special prizes ; also to the ladies of Prescott, especially Mrs. B. French, who so ably and cheerfully assisted in the decoration of Floral Hall.

Edwardsburg.

The President and Directors of the Township of Edwardsburg Agricultural Society in presenting their Annual Report feel that although they cannot congratulate the members of the Society on any marked improvement, there being a good deal of sameness in the exhibits from year to year, nevertheless we are pleased to state that the Society is in a prosperous condition. Although the prizes were increased last year, we are glad to report that the receipts at the gate during the Exhibition increased in a proportionate manner ; and the Treasurer's Report, which will be laid before you, shows a balance to the credit of the Society of $48.24.

The Show was held at Spencerville on the 3rd and 4th days of October, and the weather being favourable we had a very large attendance especially for a Township Show.

The quality of the stock on exhibitiion was good. Some very excellent young horses were on the ground. Cattle and sheep were also well represented. The show of pigs was fair, being mostly Berkshires. In dairy produce some fine samples were exhibited. Grain was scarcely up to the mark, being deficient both in quantity and quality. Potatoes and roots were very fine, as usual ; and fruit (more particularly apples) was excellent. The ladies' department was scarcely up to that of former years ; and we would recommend the new Board of Directors, in revising the list, to raise the prizes in that department.

GREY, EAST.

The Directors, in submitting their Annual Report, have much pleasure in congratulating the members upon the great success attending the Fall Exhibition of the past year and the continued prosperity of the Society. Your Directors have carried into effect that which you submitted to them for consideration at the annual meeting of 1882, viz., the purchase of additional show grounds and fencing the same. We are satisfied this improvement will result in great good to the Society, as there is now ample room for the exhibition of all kinds of live stock, and an opportunity afforded for classifying the same

with less danger to life and property than on former occasions, when our show grounds were limited to five acres for all purposes.

To make the improvements referred to, the Directors had to borrow the money required for that purpose, which they managed to do at a low rate of interest. Having thus to borrow, they decided to charge fifteen cents to show grounds instead of ten cents as on former occasions, and judging from the amount collected in this way, if continued, the additional five cents charged will nearly meet the annual payments of the loan, thereby leaving the Society in a position to offer good prizes in the future.

We do not now purpose to comment on all the different classes of animals and articles exhibited, as we wish to give expression to some thoughts regarding seed grain—a matter in which the agriculturists of the Riding are deeply interested. Suffice it to say, all taken into consideration, the Exhibition was an improvement on any former year and a great success for the Society.

Re Grain Raising—The Fall wheat in quantity and quality has been extra good throughout the Riding, and was well represented at the Fall Exhibition. In Spring wheat we cannot so boast, although that exhibited was of fair quality; yet we know this was not a fair representation of the average of the Spring wheat crop raised in this part of the country in the past year. All who are posted regarding the yield and quality of the last Spring wheat crop raised know that spring raising has not been as profitable as in former years, as the yield is decreasing and the quality becoming more inferior. This may be in part owing to climatic influence; but we are of opinion that the time has come when a change of Spring seed wheat and barley is highly important. We do not mean to change for some other varieties, but a renewal of those varieties which have proven best adapted to the soil and climate. It is well known and highly desirable this change of seed should come from a distance. The question now arises, How are we to get it? Our Agricultural Societies have not the means; our Municipal Councils are silent and most likely not prepared to aid. We believe the Government of this Province are the party: they have the power and they have the means. If they would come forward to the aid of the agriculturists of Ontario, and import a quantity of seed grain sufficient to at once supply the farmers of the country, they would then be doing more to advance the prosperity of the Province in one year than they will be able to do by keeping the Model Farm in existence for a century, and this without loss to any, as by importing a large quantity they could do so at a comparative small expense. They could apportion the quantity to the different municipalities, and have it sold to the farmers at a price sufficient to pay expenses. This done every four or five years would be contributing largely to the interests of the farming community and to the prosperity of the country generally.

Meaford Horticultural Society.

Your Directors beg to report that two Exhibitions have been held by the Meaford Horticultural Society during the past year. The first on the 11th and 12th of July, and the last on the 20th and 21st of September.

At the Summer Exhibition, owing to the backwardness of the season, the show of early fruit was very small. The Flower Show was, however, a success both as regards quantity and quality; the Directors do not, however, recommend a repetition of the Summer Show for the coming season.

The Fall Show may fairly be considered to have been a success all round. The show of flowers and fruits was very fine indeed The show of vegetables good, but not calling for any particular expression of praise. The show of ladies' work included some very excellent and beautiful specimens of needlework, knitting and crotchet work, and added much to the interest of the exhibition as a whole.

The Directors feel that the Meaford Horticultural Society is now fairly established, and see no reason why it should not go on increasing in its usefulness, and its exhibitions in beauty year by year, making the love of flowers more general, and by this means making the homes of the people more and more beautiful and attractive.

HURON, SOUTH.

We, the Directors of the South Huron Agricultural Society in presenting our Annual Report, take great pleasure in recording the fact that the operations of this year have in all respects been most satisfactory. The Spring Fair of this Society, held in the village of Brucefield, was largely attended ; and the show of entire stock was very fine, particularly in the draught horse and Durham classes. Most of the valuable draught horses exhibited were imported at great expense from Great Britian, and bore ample testimony to the knowledge and judgment displayed in their selection and purchase.

Our Fall Fair, held in Exeter, was decidedly the finest and most successful ever held by this Association. The inside show was a good average in regard to merit, the finest features being the vegetable and field root classes. If the inside exhibit did not show any marked advance, the same cannot be said of the stock department. That interest appears to be bounding ahead with rapid strides, and live stock under the impetus of high prices and large demand seems destined to occupy that position in the economy of the farm which its great importance deserves.

In horses, the draught and heavy-breeds seem to find most favour with the farmers of Huron, and the younger classes exhibited certainly showed great improvement in breeding. In cattle, the Shorthorn and its grades are the all-prevailing race, and no one seems inclined (by the introduction of Herefords, Polled Angus, etc.) to dispute the supremacy of this peerless breed of cattle.

Amongst the coarse wool breeds of sheep the Cotswold and Lincolns seem to be losing favour, whilst the Leicester appear to maintain their ground well, but the star of the Downs seems at the present time in the ascendant.

The pig classes are certainly improving. The race of yore, the old razor back, seems to have been consigned to the lumberman's pork barrel, and the sleek appearance of the Suffolk and Berkshire of the present day almost convinces the consumer that they are worth 8 cents per pound.

The amounts awarded at the Spring and Fall Shows were respectively $163, and $956.75 ; whilst the gate money amounted to the large sum of $613, or about $100 over any previous receipts.

The open winter of 1881-2, followed by an unusually cold and inclement spring, caused great apprehension in regard to the safety of the fall and spring crops, and, indeed, many farmers were of the opinion that a total failure of the hay crop in particular was inevitable ; but the result showed how little dependence can be placed on the foreshadowings of even experienced and skilful men. The growth of vegetation in the months of June and July surprised every one ; the feeble Fall wheat developed with a large crop ; the yield of hay was enormous ; whilst barley and oats turned out much above the average crop. Even the late sown pea gave a fair crop. The ravages of the fly threatened at one time the entire destruction of the turnip and mangold crops, but the young plants revived so much under the influence of favourable and genial weather, that a fair crop of excellent quality was the result. The carrot is perhaps at the present time the surest crop under cultivation with us. If sown early, its deep root enables it to withstand drought, wet causes it to flourish provided the land is drained, and no insect seems to derive much pleasure from either eating or attacking it in any way. In referring to the destruction of the turnip crop by the fly, it will not perhaps be out of place to call attention to the valuable report of the field root judges of the West Huron Agricultural Society. As a mode of destruction or prevention, the liberal, and even what most farmers would say excessive, use of salt is recommended. If it can be demonstrated that salt is as great a safeguard to the turnip as Paris green is to the potato a great point will be gained. Whilst on the insect pest subject, we may remark that the pea bug is still master of the situation, and that the Hessian fly is present in most of the wheat fields in the county.

During the past year a considerable breadth of Sorghum has been grown, with, on the whole, satisfactory results. The practicability of this county producing its own molasses, even with the inferior appliances now in use, is clearly shown ; and we have no doubt, if the feelings of the juvenile portion of the community are consulted, unlimited molasses will be the order of the day in 1883.

The apple crop of 1882, owing to the peculiar blight which affected the trees, was poor, and the apple worm and gale of September last made the poor crop still poorer; yet, after all, enough fruit was gathered for home use and a considerable amount for exportation.

The reports of the Branch Societies show favourably as regards their progress and financial standing, but as the local Boards do not enlighten the parent Society as to the position of agriculture in their different localities, we cannot enlighten ourselves or the public by reproducing from their knowledge or experience.

KENT, EAST.

We, the Officers and Directors of the East Kent Agricultural Society, respectfully present to you our Annual Report. It is with pleasure that we state that the past year has been one of prosperity to this Society, in some respects it has surpassed former years.

Our Spring Fair, held on the 25th of April, far exceeded our expectations. We think this success was mainly due to the Society offering larger prizes than on previous years, thereby inducing holders of good stock from a distance to exhibit.

The exhibit in the different grades of cattle and horses was larger than on previous years. Some excellent animals were exhibited. An admission fee of 10 cents was charged, realizing some $52, which would do much towards paying the increased amount of prizes.

We are pleased to be able to congratulate you on the result of the Fall Fair held 2nd and 3rd October, which was in many respects the most successful one held by this Society. The show in cattle was unusually large, and the quality an improvement on former years. The exhibit in pigs and sheep was equal to previous years. The exhibit in horses was far in advance of former years, and the different classes were well represented. Some really fine animals were exhibited, making a grander display in this most important branch than a great many Fairs of more pretentions.

The poultry exhibit was unusually large, and some well-bred fowls were shown; one enterprising farmer had as many as twenty-two coops. The building erected last season for this exhibit, and thought to have ample accommodation, did not accommodate more than half the fowls exhibited.

The show of fruit was very fair considering the unfavourable season. Apples especially were well represented by some fine varieties of good quality.

The ladies' department was not as well represented as on previous years, but we must acknowledge that we think this fault was mainly due to a very imperfect list. As a motion is on our books for the revision of this list, we hope that the coming exhibition in this most attractive department will exceed any that we have yet had.

The Fair in the whole shows conclusively that greater interest is being taken year after year in the breeding and rearing of all the animals of the farm; and in the extensive opening up of new markets for horses and cattle, sheep and poultry, we think we are justified in stating our belief that the future will be full of success to the agriculturist who will perseveringly apply the best known methods of farming, and take advantage of the enterprise of our extensive and successful breeders throughout the Province.

We would further state that the Fair Grounds at Chatham have been sold for the sum of $3,500, half of which belongs to this Society; and it will be for your Directors appointed to-day to say how this amount shall be invested to still further the interests of this Society.

We would add that we would not be in favour of selling the present grounds and purchasing larger grounds farther out of town, but would recommend that the present grounds be enlarged and suitable buildings erected thereon.

In concluding this report, we have reason to be thankful to God for the many blessings He has bestowed upon us in giving us a bountiful harvest and allowing us to enjoy it in peace.

Harwich.

Your Board, in presenting their accustomed Annual Report, have great pleasure in congratulating the members of the Society on the successful results attending the working of the Society during the past year. The Exhibition, the latter part of September, was a most successful one and highly encouraging. The show of live stock was excellent, particularly in horses. The show of grain and roots was distinguished for the great number of entries and their superior quality. The display inside the hall was very fine, and very creditable to the lady members who so much contributed to its success. We have on our subscription list 285 members, the greatest number yet attained; and the entries the most numerous, being over 1,200. The gate money received amounted to over $221. The sum of $450 was offered in prizes and over $300 awarded, of which $230 has been paid.

Your Board has purchased a car-load of seed peas, which were disposed of to the members of the Society at cost, and thus distributed throughout the township with good results. * * * *

Howard.

The Annual Exhibition of the Society was held on the Society's new grounds (purchased from Benjamin W. Willson), a short distance from the town of Ridgetown, on Wednesday, Thursday and Friday, the 4th, 5th and 6th of October, 1882, which was well attended. The whole of the grounds are enclosed by a tight board fence, and a number of suitable buildings and pens for the accommodation of stock, etc., are erected, also a new office for the Secretary has been built on the southerly corner of the grounds facing Main Street, running from the town of Ridgetown. The cost of the new grounds is $4,375, and the cost of the Secretary's office, $557. The fence, when completed, will cost $1,000; and the cost of sheds for the horses, cattle, etc., is $593.65. Levelling driving track cost $270.34, besides a great deal of volunteer work performed by different parties for the benefit of the Society. Judges' Stand cost $145, and the main building (from the old Fair Grounds), $145. The estimated value of buildings is $800, making the assets of the Society $7,685.

The liabilities of the Society will be as follows: Mortgage in favour of Benjamin W. Willson, $2,375; interest for one year at 6 per cent., $142.50; and prizes unpaid, $101.25—in all amounting to the sum of $2,618.75; thus leaving the assets over the liabilities the sum of $5,067.24. * * * *

KENT, WEST.

The Directors of the West Kent Agricultural Society beg leave to report to its members that the usual Spring Fair was held for the exhibition of horses, and was in every respect a success. The improvement in stock was apparent. Some new and improved horses having been brought to the country, we might mention more particularly the Percherons, imported by the Messrs. McGarvin, and some fine horses introduced by Messrs. Pike & Richardson, and Frank Drew. A small charge was made for admission at the Spring Fair. Although it was the first occasion for a charge of admission the amount was cheerfully paid by the public, and realized nearly sufficient to pay the prize list.

Your Directors intended having a reaping match, and advertised one; but not being generally desired by the manufacturers of machines, the match was abandoned.

Your Directors have to report that arrangements have been made with Mr. Robert Smith for the sale of the Society's grounds on Murray Street for the sum of $3,500, a portion of which belongs to the East Kent Society. * * *

The Fall Fair was not up to its usual standard. However, the outside exhibition of live stock was excellent, and may be considered an improvement on former years. The

display in the building was not nearly so good as former years, the number of entries falling far short of what they should have been. The attendance was very good, and notwithstanding the fact of having put up a building for the exhibition of grain and roots at a cost of about $300, the Society is no deeper in debt than this time last year; and your Directors trust that the incoming Board, as well as every member, will put their shoulder to the wheel, work harmoniously together, and with a long pull and a strong pull take the Society out of debt by the next election.

Your Directors would suggest to the incoming Board the immediate revision of the prize lists for the Fall Fair. For several years back this task has been deferred till too late in the season, and deprives many intending exhibitors the opportunity to prepare for exhibit articles that would materially add to the attraction of the Exhibition. Special subscriptions should be solicited at once, and the list revised and in the hands of the members by the 15th June if possible.

Raleigh.

The Society has been supported by an increased membership, also by donations from several persons, for which your Directors are thankful.

We would like to see more of the farmers in this township extend their liberality to the Society by uniting themselves as members thereof; we would then be in a better position, financially, for carrying out the objects of the Society in the importation of stock, seeds, etc.

In the beginning of the year your Directors purchased a car-load of seed peas from the County of Huron, which was given to the members at cost, which gave good satisfaction. We are glad to know that peas can now again be raised without suffering from the ravages of the bug; as we know of no crop so useful for the early fattening of pork, and that will leave the ground in such good condition for fall wheat.

Your Directors feeling the want of more accommodation for exhibitors and visitors, held their Show in Charing Cross, which was very successful. Our entries were increased as also a very large increase in the number of visitors was manifested.

In horses we are behind our neighbouring townships, but in sheep, pigs and cattle we are in advance. The ladies made a good show in their department, many new exhibitors coming forward. We hope to see this continued.

We feel that our Society is having the effect of stimulating farmers to the raising of a better class of stock, as no department of agriculture repays the farmer to the same extent as the improvement of our herds. Meat of all kinds is now bringing a high price in the market, and it becomes farmers to raise those animals that will produce the most flesh with the least expense. * * * *

LAMBTON, EAST.

In presenting to you this our Eighth Annual Report of the above Society, we have to report both Spring and Fall Shows as a success. Although there has been a slight decrease in membership and gate receipts, yet there has also been a slight saving in some departments of expenditure and an increase over last year's entries by eighty.

Your Secretary has taken the liberty of departing from the usual mode of making out the Report, in the fact of ignoring altogether the Report of the Treasurer, leaving him to present to you the true and actual financial standing of the Society to date, and confining myself now to the showing how the Society has increased or decreased in the various departments during the past year only. The spring show of entire horses held in the Village of Forest, on the 27th of last April, was a decided success, in fact it was generally conceded to have been the best Spring Show ever held in the County of Lambton, there being forty-four entries and twenty-six prizes awarded, amounting in medals and cash to $86. The annual Fall Show was held in the Village of Arkona, on the 12th and 13th of October, and in every department the show was generally admitted

a success with one exception—the gate receipts—which undoubtedly suffered considerably on account of the heavy downpour of rain early in the afternoon of the second day. The yeomanry of this county, and consequently the manufacturer and merchant, have very great reason to be thankful to the Giver of all Good for the general prosperity that surrounds us. The generally acceded statement with reference to the crops has been good, in fact rather above an average, with one exception—that of fruits. You will see by the printed Reports that have been handed around that the Society have not quite as much surplus this year as last, but when you take into consideration the sudden stoppage of gate receipts and the increase of awards at both the Spring and Fall Shows, that were it not for the above reasons the surplus would have been about the same as last year. Of course my report to you takes for granted that all awards have been paid, as well as including some awards for 1881 which have been paid this year, leaving no incumbrance for another year. As there are quite a few prizes not yet paid, it will of course make your Treasurer's Report show a greater balance on hand than that of your Secretary.

Trusting the Officers and Directors of 1882 have performed their duties to your satisfaction.

COMPARATIVE STATEMENT.

—	1877.	1878.	1879.	1880.	1881.	1882.	Increase or Decrease.
Number of Entries	1578	1584	1981	2137	1991	2071	In. 80
Number of Members	345	285	278	309	367	313	De. 54
Gate Receipts	$194 00	$188 00	$281 00	$324 22	$266 81	$235 48	De. 31 33
Prizes Awarded at Spring Show	664 00	713 00	764 00	975 79	749 20	86 00	In. 32 35
" " Fall "						695 55	
Printing, etc.	61 00	34 00	71 00	61 75	52 70	30 00	De. 22 70
Postage and Stationery	8 00	4 00	5 00	11 84	3 29	11 36	In. 8 07
Directors' and Judges' Expenses	56 00	59 00	72 00	81 17	76 60	59 85	De. 16 75
Assisting at Show	32 00	17 00	49 00	30 00	34 75	33 25	De. 1 50
Salaries, etc.	49 00	51 00	55 00	55 00	60 00	66 00	In. 6 00

ABSTRACT STATEMENT.

Balance, 1881	$172 40	
Members' Subscriptions	312 00	
Gate Receipts	235 48	
Government Grant	700 00	
County Grant	100 00	
		$1519 88

Disbursements.

Prizes paid for 1881	$ 7 25	
" " 1882, Spring Show	86 00	
" " " Fall Show	695 55	
Government Grant to Townships	420 00	
Exhibition Grounds	55 00	
Gatekeepers, Constables, and Caretakers	33 25	
Printing, Advertising, etc.	30 00	
Postage and Stationery, etc	11 36	
Directors and Judges' Expenses	59 85	
Secretary, Treasurer, Auditors and Assistants	66 00	
Refund Member's Subscription	1 00	
Balance on hand	54 62	
		$1519 88

LANARK, NORTH.

I herewith transmit to you the Annual Report of the North Lanark Agricultural Society for the year 1882—also the Reports of the Township Societies, viz.: Dalhousie, Lanark, and Pakenham. All these Township Societies are in good working order, and their Exhibitions are largely attended.

In reference to the Electoral District Society, I am glad to say that it is and has been for some years past continually increasing in every respect, and is now in a very prosperous and active condition.

We had, last year, to enlarge the Show Grounds to nearly double the former size; we also built a long string of sheds; a neat board fence around the horse-ring; a handsome house for poultry, and a large dining hall, besides gave the grounds a good cleaning up, and levelling off. Our main Agricultural Hall is large and comfortable, and it also went under some necessary repairs.

Our Annual Exhibition, last October, was the largest and best we ever had. The entries were large, and we had over 7,000 visitors. We consider that these Societies are doing a great deal of good.

Special prizes are offered by the Rosamond Woollen Company for the importation of pure Southdown rams. They gave prizes last year, and it proved so successful that they are offering the same this year. Other gentlemen are offering liberal prizes for butter, which will likely cause a strong competition.

THOMAS COULTER, *Secretary.*

MIDDLESEX, EAST.

In reviewing the past year we have great reason to be thankful for the manifold blessings we have enjoyed, and for the continued exemption of our highly favoured Province from the many serious evils that have sorely afflicted some other countries. We have been blessed with a succession of good crops for several years past, with an active demand and high prices for all kinds of live stock. And when we compare the position of the farmers of this county at present with what it was some few years ago, we must acknowledge that we have every reason to be satisfied.

The perfection of the machinery used on the farm has reduced the manual labour of the farmer more than one-half, and the general improvements in the roads in this Riding has lessened the labour of taking the produce to market in the same proportion; this, with the railroads and lines of steamships available to convey our surplus produce of all kinds to the best markets in the world, ensures us at all times a ready demand and a remunerative price.

Indeed it is difficult to conceive what further public improvements we require to enhance our prosperity. But experience shows that nothing but careful economy will secure continued prosperity. Notwithstanding the facility with which farmers can make money now, it is to be feared that many have increased their expenditure still faster than their income. And the enormous business done by the Loan Societies of this city shows too surely that many farmers are paying a high rent in the shape of interest on the lands of which they are the nominal owners.

The price of wheat is lower this year than it has been for some time past; but this is by no means an unmitigated evil. It means cheap bread to thousands of poor labourers in Europe, and will be an indirect benefit to us, as it will tend to prevent the sowing of too much wheat in proportion to the land we cultivate. This practice, stimulated as it has been for some years by high prices and good crops, has done more than anything else to deterioriate our soil.

It is needless to say much on the subject of the Western Fair, last fall; you were all witnesses of its success; and we have only to congratulate each other that it exceeded

our most sanguine anticipations, which, we think, may be attributed in some measure to the extra attractions that were provided.

Great difference of opinion exists as to the propriety of introducing these extra attractions and amusements, such as trials of speed, music, etc., at Agricultural Shows. Some fear that the main objects of the exhibition will be lost sight of amid so many counter attractions that have a tendency to divert the attention from the profitable and useful to the merely attractive or amusing. While others hold that it is of the first importance to promote such attractions as will draw the crowd, as it is self-evident that the people can be neither instructed or entertained unless you can induce them to attend, and it is from the crowds that are attracted by these amusements that the Society gets the money to improve the exhibition by offering larger prizes to the more important classes.

From the greatly increased attendance at our Fair last fall, in consequence of these extra attractions and from the eagerness of the crowds to see the sports in the horse-ring, we are convinced that the great majority are in favour of combining pleasure with profit; and while we acknowledge the paramount importance of the agricultural and industrial departments, see that it is necessary to the financial success of the Society that a variety of attractions should be provided to meet the public taste. Such being, as we believe, the opinions of the great majority of the people, it becomes the duty of your Directors to carry their wishes into effect. As we recognize the fact that your officers are not placed in their positions as rulers or censors of public opinion, but merely representatives and servants of the public, and their highest merit is implicit obedience to the voice of the people when clearly expressed.

You will remember that a resolution was passed at the last annual meeting authorizing your Directors to expend the $5,000 that you have to your credit if it was required, on condition that if the present Exhibition Grounds were either sold or divided the money should be repaid; it has not been required, as all the improvements made on the Exhibition Grounds this year such as building the Grand Stand, enlarging the horse ring, etc., has been paid for entirely out of the Western Fair funds. We contribute the whole of the interest of this money each year towards the support of the Exhibition, so that it derives exactly the same benefit from it as if it was invested to the credit of the Western Fair, while we retain control of the principal, so that in case of change of circumstances it may be used as you think best to serve your interests.

It is a pity that a greater number of farmers do not join our Society and attend the annual meetings. We believe that far more than half of the exhibitors from the country pay their dollars to the Secretary of the Western Fair at the time of making their entries; in this way, of course, they have all the privileges of exhibitors, but they practically exclude themselves from all share in the management. Besides, you should not forget that every dollar paid to the Secretary of the Western Fair only goes to increase the surplus, of which the city would get by far the largest share if it was ever divided; while every dollar paid to your own Directors directly increases the proportion of that surplus that would be due to the East Middlesex Society in the event of a division.

Our Treasurer will submit the financial statement of the East Middlesex Agricultural Society for your approval, and the Western Fair accounts that have been printed and distributed amongst you show that the result of the last Western Fair has been to increase our net surplus in the bank by nearly $1,000 in addition to upwards of $2,000 expended in building the Grand Stand, enlarging the horse ring, and other permanent improvements that have made our grounds and buildings, without exception, the most convenient in the Province.

As a certain proof of the increasing popularity of the Western Fair, we need only mention that we took upwards of $3,000 more at the gates at the last Fair than we had ever taken before, and we have every reason to feel confident that the Western Fair will still continue to increase and prosper as long as it is impartially managed to the satisfaction of both the citizens and farmers of the noble district of which the City of London is the natural centre.

MIDDLESEX, WEST.

Herewith is submitted, with a recommendation for adoption, the names of 245 members of the Society for the year 1882; also the Treasurer's Statement of Receipts and Disbursements duly audited, showing the total receipts to be $1,679.67, and the disbursements $1,551.40; leaving a balance in the Treasurer's hands of $128.23.

The Spring Show of Horses was held on April 19th, which was unfortunately very wet, thus preventing as large an attendance and exhibition of horses as otherwise would have been. Among those exhibited were some Percherons and French Canadians.

The Fall Show was held October 5th and 6th, which was very largely attended on the second day; the gate receipts being $413.56, a sum greatly in excess of any former year. Prizes were awarded to the amount of $666.15. Everything went off very satisfactorily. The horse track, having been much improved, added greatly to the attractions.

An effort had been made to induce some of the most prominent manufacturers to bring their machines for exhibition which could not be done, as nearly all of them had sold all their machines or implements on hand. Probably, if exertion is made earlier in the season, it may be more successful.

Your Directors received an offer from Mr. John Cummings to purchase ten acres of the southern part of the Agricultural Grounds at $90 per acre. After mature consideration, they decided to accept Mr. Cummings' offer, and called a special general meeting of members of at least two years' standing to sanction the sale. The meeting was held on December 16th, and the sale sanctioned. The sale has been completed, the money paid, and the mortgage held by the Huron and Erie Loan and Savings Company, of London, has been paid off, and the Society is now out of debt.

Your Directors would submit the following as an approximate estimate of the principal crops for the past year:—Fall wheat, 25 bush. per acre; spring wheat, none sown; barley, 30 bush., much damaged by wet; oats, 40 bush.; peas, 20 bush., not many sown; corn, 40 bush. shelled; potatoes, 100 bush.; turnips, 500 bush.; mangolds, 600 bush.; carrots, 500 bush.; hay, 2 tons; fruit, a failure. The weather in spring was very cold and vegetation very backward.

We have to record the removal by death of a former director, Mr. Arthur Twohill, one who always attended to the business of the Society.

MUSKOKA AND PARRY SOUND.

The number of members was 120, an increase of four over the number of the preceding year, and the amount subscribed by them was $122.50

The following are statistics relating to last Fall Show in October, 1882: The receipts at the show ground gate amounted to $117.88, being $28.02 more than what was taken at the preceding show.

The value of prizes taken was $365.75, apportioned as follows: For horses, $61.50; cattle, $51; sheep, $60; pigs, $13.50; poultry, $9; grains and seeds, $40.25; roots and other hoed crops, $20; dairy products, $18; fruits, $4.50; vegetables, $18.25; general manufactures, $19; ladies' work, $50.75.

There were 841 entries, being 129 more than in 1881. Altogether the Society has every reason to be satisfied with the success attending their Fall Shows. The last one in October appears to have pleased all who attended it, and the Society was congratulated by judges from the "front," who expressed themselves strongly as to the success of the show.

The ploughing match which was held last fall was supported entirely by private contributions and subscriptions.

Our Reeves have been successful in obtaining a grant of $100 from the County of Victoria.

The Township Societies appear to be doing well.

NIAGARA.

The past year has been one of great prosperity, for which we as a people ought to be most truly thankful to the All-wise Giver of all good. The crops of Winter wheat, as well as other grain, have been unequalled for a number of years past, which was proved to be so from the number of entries made, and the beautiful samples exhibited in the grain department of your Exhibition.

The fruit crop for the past year was not so abundant as the year previous, but the samples of the various fruits on exhibition was beyond a doubt such as would have done credit to a much larger division, along with the field roots and vegetables, made up one of the finest shows in any county in this section of our fair Province. During the past year the cattle were far superior to any hitherto exhibited, and the sheep, both long and short-woolled, were far in advance of any before produced at your Show. Last though not least in our hall was the ladies' work and flowers. You may be assured it put the committee to their utmost capacity of thought to devise a scheme to have it all exhibited in the one hall, for the display was a grand one. Before closing their report, your Directors desire to express their gratitude to the Government of the Province of Ontario for the continuance of the grant to your Society, and hoping they in their wisdom will be pleased to so continue the same for all time to come, so long as your Society continues to hold such successful exhibitions in your division.

NORTHUMBERLAND, EAST.

Your Directors in submitting their usual Annual Report, desire at the outset to acknowledge the blessings of an All-wise Providence, which has rewarded the labours of the agriculturalist with an abundant harvest in most sections of our highly favoured land, and continued and diffused those blessings of peace and plenty, which have enabled a large majority of our citizens to provide themselves abundantly with the necessaries, and in very many cases with the luxuries of life.

The number of members (ninety-nine) of the County Society was larger than in many former years, and your Directors view this as an indication of an increasing interest in agricultural, horticultural and mechanical enterprises. We, however, think that even this large number might be very materially increased by greater individual exertion on the part of the officers of the Society.

The Annual Exhibition was held on the grounds of the Union Agricultural Joint Stock Company, Brighton, on October 12th and 13th, and in by far the greater number of departments proved a decided success. The attendance was large, some 2,000 people visiting the grounds on both days. The articles shown in the hall—viz., grain, roots, dairy products, ladies' work, etc., etc—were much better in point of quality, although in some classes the entries were not numerous. In ladies' work there appears to be plenty of competition, yet your Directors feel it their duty to call attention to the fact that a few of the articles shown have a very familiar appearance, and would most respectfully suggest that more modern and useful specimens of the handicraft of the fair sex be exhibited in the future. In oil paintings, crayon drawing, pencil drawing, painting in water colours, as also in the classes of ornamental and useful needle-work, great credit is due our lady friends for the taste and talent displayed, and that "success may be still more successful," your Directors would offer it as their opinion that the services of an experienced lady should be secured in revising the prize list, and also in judging the articles of this very interesting department of our annual exhibitions.

Your Directors have great pleasure in calling attention to the display of evaporated fruit, vegetables and corn, made by J. S. Brown, Manager of the Scientific Evaporater Co., of the Village of Brighton, and would heartily recommend that several liberal prizes be offered for evaporated products, so that this most important and profitable industry may be encouraged in every possible manner.

Never before in the history of our County Exhibitions has such a large show of honey been seen as at the late Fair, and your Directors hope that the way may be opened to make this a special feature of our yearly gatherings.

The display of waggons, carriages, buggies and sleighs of Messrs. Lewis, of Brighton, Chapman, of Colborne, and Davis, of Castleton, demonstrates very fully that no one need go out of our own county for either a serviceable or stylish vehicle.

Your Directors have pleasure in informing you that an amicable and fair arrangement has at length been come to between the Township Societies of Brighton and Percy, by which an equal amount is to be paid by each Society in alternate years into the funds of the County Society. We hope that this will have the effect of producing a more harmonious and successful working of the several Societies mentioned.

The finances of your Society are in a very satisfactory condition. The financial report will show that, after paying $354.40 in prizes and the necessary miscellaneous expenses, there is still in the hands of the treasurer the sum of $17.75. This is in a great measure owing to the arrangement referred to above.

The establishment by the Ontario Government of a Bureau of Industries and Statistics has in our opinion been an excellent arrangement, and resulted in the collection of much useful and advantageous information, which has been circulated in printed sheets, and through the press of the country, so that nearly everyone has enjoyed its benefits. * * * * *

A Bill for the establishment of three public creameries in the Province—one in the west, one for the east, and another for the centre—has been introduced into the Legislature of Ontario. The manufacture of butter is one of the important industries of our Province, and anything tending towards its development and improvement should be encouraged. We venture to suggest that the proper authorities be communicated with, that, if possible, the one for central Ontario might be located in this Riding, as it is a most favourable section for dairying. * * * * *

In closing this Annual Report your Directors desire to express their fervent interest in the future of the Society, and trust that whoever may be elected to control its affairs during 1883, may be able to report greater advancement in the science and practices of agriculture, horticulture and mechanical pursuits, than has characterized the years of the past, being fully persuaded that whatever aids the promotion and development of these industries will be of incalculable benefit to the country which we are proud to call our own.

Cramahe.

Your Directors, in presenting their Annual Report to the members of the Society, find that the business of the Society has been carried on under great difficulty, owing to the low state of the finances and the apathy displayed by the farmers of our township, for whose special benefit the Society is intended. Although the Annual Exhibition was not what we would like to have it, it was a slight improvement on last year; there being 470 entries this year, against 398 last year. There was a falling off in the membership, being 109 against 115 last year. The quality of the stock of all kinds shown would compare favourably with former years.

We believe it is admitted by those that have had experience in stock raising, that to use thoroughbred sires is a great improvement in stock raising, and we were glad to find three specimens of thoroughbred bulls, and some fine rams and boars. In grain and seeds the quality was good, but only a few entries. In roots the class was well filled, and a good display. Horticulture was about an average exhibit. In mechanics' work there was a very small display. Dairy products were well represented in butter, but there was only two entries in factory cheese, and no entry of home-made cheese. The ladies' department was scarcely up to former years, but the excellent samples of ladies' work exhibited clearly evinced that there is plenty of talent in this direction if it only could be evoked and brought under public notice.

The finances of the Society show a slight improvement on the two former years, for while there was nearly $20 more paid in prizes this year than last, you will see by the

treasurer's report we received $17 less Government grant this than last year. The treasurer's report, which will be laid before you, shows a balance due treasurer of $5.22 last year, and a balance on hand this year of $4.42.

Now the great question is what to recommend to our successors, so as to make the Society a success in the future. Your Directors would recommend: 1st, That you strive to appoint such men for officers and directors as will take such an interest in the Society, and will spend a little time to get members to join so as to increase the funds and attend the meetings.

Your Directors cannot close this Report without expressing their thanks to the Legislative Assembly of Ontario for establishing the Bureau of Industries for collecting, tabulating and publishing industrial information for public purposes and the general information of farmers; the main object kept in view being to narrate facts rather than to draw inferences or express opinions. * * * * *

Percy.

Your Directors beg leave to report as follows:—That the Annual Show this Society held at Warkworth on the 4th and 5th days of October, 1882, was the best and most successful show ever held by this Society, and the attendance thereat was large; the receipts at the gate being $217.30. The entries were fully up to any former year, and the animals and articles exhibited were of good quality, and the competition close and keen.

The show of horses, cattle, sheep, pigs and poultry were numerous, with some fine specimens. The Durham and Ayrshire cattle exhibited were of good quality, and quite a large number for a township show. The Leicester and Cotswold sheep exhibited were also of a fine quality; and in pigs, those exhibited were also of good quality.

The grain and root department was well represented, and some very fine samples exhibited.

The ladies' department was well represented, which materially added to the interest of the Show.

Your Directors congratulate the farmers, mechanics and other members of the Society on the interest they have taken in putting their animals and articles on exhibition —for "Unity is Strength"—which makes this yearly show a success.

Seymour.

Your officers and Directors beg to say that, following the course of our predecessors in office, the operations thereof have been confined to supplying each member with a good agricultural journal; and the Annual Show in the fall, which was held on the 19th of October, in the Village of Campbellford, and proved to be perhaps the most successful and satisfactory of any held under the auspices of the Society. The entries were more numerous; the horses, cattle, sheep and swine were better, and more pedigree cattle are being shown year by year. All kinds of grain being a good crop in the township, the show in this respect was good also; and in roots and vegetables and fruit, very creditable. The attendance was large, and consequently the amount taken for admission was more than has been on any other occasion, thereby showing an increasing interest in the Society: but we regret to add that our membership is not one-half what it ought to be. Your officers, therefore, would advise our successors in office to make an extra effort to secure new members.

NORTHUMBERLAND, WEST.

The Central Fair of the district—comprising this Society, East and West Durham, South Victoria and West Peterboro'—was held in Cobourg in September last, on account of which no County Show was held in this Riding, but our funds applied to the above, as will be seen by the Central Financial Report attached.

The Central Exhibition was a success so far as the quality of the animals and articles exhibited are considered; but the quantity, as compared with the Central held here four years ago, was not equal.

A marked improvement could be seen in the quality of live stock on exhibition, and much credit is deserving those in this Riding who have taken so much interest in that direction, especially in horses and Durham cattle, several of which have been imported.

Sheep seem to be confined to a few who still keep up their fancy flocks in small numbers, and confined to the long wool, with a few flocks of the Merino and South-downs, neither of which are so extensively raised as a few years ago.

There are some excellent lots of pigs throughout the Riding, which have been much improved since the last Central Fair by many imported into the Riding.

Some splendid samples of grain, roots and fruit were on exhibition, but were deficient in quantity.

A considerable interest was also shown in the dairy department, and will prove a great benefit to this part of the country, as it has been very much devoted to grain raising; but of late more attention has been given to the dairying interest and stock raising, and will be a great benefit to the farming community.

We feel gratified to be able to say that we are still in a prosperous position financially, as we are rapidly paying off the debt on our new fair grounds, which in position and convenience are second to none in the Province, and we feel will be a credit to this Society.

OXFORD, NORTH.

This year, as regards the operations of the Society, has been a somewhat busy one. We have been widening our borders and strengthening our stakes. It is with Agricultural Societies as with other institutions, there is no standing still; they must either progress or retrograde. That this society should do the former—*i. e.*, to make progress—your Directors were resolved; and in order to do it, they determined, if possible, to enlarge and improve the exhibition grounds. In this they succeeded. A purchase was made by them of two acres of land on the north side of the show-ground, at $1,260. Having secured this extension of grounds, they at once proceeded to erect a permanent refreshment booth and secretary's office, cattle sheds and hog pens, and also to considerably enlarge the horse ring. This extension and these improvements have long been desiderated, and, they now being supplied, we have a show ground which, for beauty of situation, extent, and admirable arrangements, is not surpassed, except in large cities. The total expenditure for these improvements, together with the price of the land, is $2,038.23. To meet this expenditure, and also to liquidate the debt remaining on the old ground of $109, the Directors resolved to borrow $2,200, and to mortgage, for $2,000 of that sum, the whole grounds. This they did at six per cent. per annum, for five years. But to meet the interest on this loan, there is an income of $74 per annum, derived from two dwelling-houses on the newly purchased property; and also an increased revenue from the refreshment booth, besides the increased success of our Annual Exhibition.

The Directors would again express their satisfaction with the co-operation for exhibition purposes of the Blandford Agricultural Society, and are also glad to learn that there is every probability of the East Oxford Agricultural Society uniting with us for the same object. The feeling is becoming widespread that Woodstock is *the* place for a grand County Show, and we hope that the time is not far distant when other Township Agricultural Societies will cast their lot in with us, and form a Central Exhibition of no mean magnitude.

The Seed Grain Fair was held on the 8th March. The exhibit was very fine, especially the wheat. With one exception, all the prizes offered were awarded, amounting to $42. The attendance of farmers in quest of good seed grain was large, and the competition for its purchase was brisk. Nearly every bushel was sold.

The Stallion Fair was held on the 19th April. There seems to be a falling off, espe-

cially in number of horses, at these exhibitions. This is somewhat remarkable, considering the demand there is for horses, and the high prices obtainable for them. On the day of our Show, the weather was unfavourable; but, notwithstanding this, the Market Square, where the Fair was held, was crowded. The sum of $85 was awarded in prizes.

The Autumn Exhibition was held on the 21st and 22nd September. It was looked forward to with great interest, the demand for prize lists evidencing this. The entries were more numerous than before, and everything boded a successful show, and to a great extent it was so, although the weather militated against it not a little, especially on the first day and on the morning of the second. The visitors came late; but they came in shoals, crowding the wickets for entrance tickets. $643.65 was realized by their sale. As on previous exhibitions, the display of horses was magnificent, and the crowd surrounding the elliptical course, ranged as in an amphitheatre, gazing with admiration on the fine equine specimens competing, formed an animating and striking scene. The show of cattle, sheep, etc., was also very good. One feature of the exhibition in the Agricultural Hall is worthy of special mention, viz., the superb display of plants and flowers made by Messrs. Barr, Vroman, Whitehead and Nichol. Some of the prizes given in this class were high; but it was well-spent money, as the Hall was made thereby gay and brilliant, and served to make up for the light exhibit of the orchard product, caused by the unpropitious fruit season.

The gratitude of the Directors prompts them again to express their sincere and cordial thanks to the donors of the special subscriptions. It is pleasing, indeed, to notice the maintenance of this liberal spirit on the part of many of the citizens of Woodstock. This year a total of $255 was subscribed. We hope that their liberality and public spirit, when again appealed to by the Directors for 1883, will find higher manifestation still; so that the prize list will be even more provocative of competition, and draw still larger crowds of exhibitors and spectators.

The Directors, with great pleasure, would now record, for perpetual preservation in the archives of our Society, the fact that Mr. John Smith, jr., Ratho, Secretary of the Blandford Agricultural Society, was awarded the first prize, of $30, offered by the Agricultural and Arts Association, for the best Essay on Manures. We hope that more of our intelligent farmers will go in and win the $100 prize offered by the same Association for an Essay on "The Best and Most Practicable Means of Improving the Quality of Butter in Ontario;" and also the prize of $50, for an Essay on "The Increasing Tendency of the Times for Farmers' Sons to leave the Occupation of their Fathers for Other Pursuits." The Provincial Association is doing good work in thus eliciting from the farming community their acquired experience and intelligence on the several branches of Agriculture and cognate subjects. By doing so, it effectually replies to the charge now brought against it, that "its usefulness is gone." Thousands of farmers would not willingly let it die. Its usefulness in the past has been immeasurable, and if well conducted is yet a great power for good to the agricultural interests of the Province. * * * *

PEEL.

The Spring Fair was, as usual, a success; the show of stock being considered equal to any ever shown here.

The Fall Fair was also very successful. We were favoured with the finest weather, and the attendance was such as to satisfy the most sanguine. The two days' Fair has been admitted by all to be the better, both for the exhibitor and the public.

The proceeds of the two days' Fair at the gates was $1,267.50—the highest amount taken at any Fall Fair. The entries were 2,778; the highest any year, 2,994.

While the exhibition in the Hall was not as full as might be desired, yet the excellence of the exhibit was admitted. The vegetables, the fruit and flowers, the fine arts, and ladies' work are all peculiar features of our Fall Fair, and the display of 1882 was worthy of the County of Peel.

Outside the Hall, the show of horses and stock was first-class. The judges of poultry spoke highly of the exhibit in their department, and recommended that more accommodation be made for this department.

The total amount of prizes awarded this year was $1,920, besides about $280 specially given by friends of the Society. There have been paid $50 for prizes of former years, and $1,862 for the year 1882, leaving between $40 and $50 unpaid.

The future success of our Society will depend very much on the energy and interest taken by the future Board of Directors and members of the Society.

There is a great future before this country, and our county, although small, ought and will bear a share in helping on the progress of our country, by encouraging and stimulating, in every possible way, improved methods of farming and raising stock; and our Society will be in the front of the County Agricultural Societies.

One of the members of the Board has removed from the county during the year—our First Vice-President, Mr. Hartley, who has been identified with this Society since the beginning of its existence, being one of the first appointed thirty years ago, and his loss will be felt, as he was an active and energetic member.

The following is a synopsis of the Treasurer's Report:—Total receipts from all sources, $2,893.25, which makes, with the balance in hand at the beginning of the year, the total $3,140.62. The Expenditure is $2,712.75, leaving a balance in hand of $427.89.

PETERBOROUGH, WEST.

South Monaghan.

In bringing before you the Annual Report of this Society, it affords us much pleasure to state that our Society is still progressing, although our worthy President was unavoidably absent (being in England) at the time of our Exhibition. Too much praise cannot be bestowed upon our worthy Vice-President, W. Rutherford, Esq., for his untiring energy to make our Exhibition a success. We feel assured the members will receive with pleasure the Treasurer's Financial Statement, showing an increase in prizes paid over last year of $30, and also a balance on hand of $56.57. We feel confident that with a little more effort our Society will be second to none.

We also have to thank George Cockburn, Esq., for his liberality in giving to this Society $16, to be paid in special prizes.

Our Exhibition held on the 10th October last was a success, having pleasant weather, which no doubt raised the receipts at the gate, and visitors were well pleased with the exhibits.

Class A—Horses were well represented in the different classes, showing a decided improvement.

Class B—Durhams were well represented, some fine animals being shown.

Grades—The competition in this class was strong, showing the benefit of the Shorthorn cross.

Sheep were well represented, both in long and short wools; and we may add that in all the departments, but more particularly in the Ladies' Department, the competition was close.

PRESCOTT.

The President and Directors of the Electoral Division of the County of Prescott Agricultural Society beg to report to the annual meeting of the said Society as follows:—

That the Society for the year 1882 numbered eighty-two members, whose subscriptions amounted to $82, as per list of members hereto annexed, and marked "A."

The Society for the past year offered in premiums, for competition, the sum of $415.50, besides the President's prize of , the Old Bachelors' prize of , Messrs. Hurley & Mode's prize of , and John McCann Barton's prize of . The competition was rife, each one eager to obtain ; but, as is said, and very truly, "the glorious uncertainties of the law" in many cases caused disappointment.

Of the above amount offered, $381.75 was paid, and after paying all expenses respecting the carrying out of the Exhibition, a balance remains in the Treasurer's hands of $94.94. * * * *

Your Directors would respectfully say that this year's Exhibition has, in every case, far exceeded all former Shows held upon the grounds. We need not mention the increase in the show of horses, of every grade, from the thoroughbred to the dray ; but must say that all classes were most thoroughly represented and the competition strong.

In cattle the competition was healthy ; the cattle in general would compete favourably (so those that attended say) with the Montreal or Kingston Exhibitions.

RENFREW, NORTH.

Grattan and Wilberforce.

The Directors of the Grattan and Wilberforce Branch Agricultural Society have to report that during the past year there was an increase in the number of members belonging to the Society.

The Directors resolved to purchase some pure-bred rams, and, if possible, a bull, for the Society ; but, as the finances of the Society would not admit of this being done without assistance, an appeal was made to the members to donate to the Society any prize money which they might take at the Annual Exhibition in excess of the sum required to renew their membership subscription for the ensuing year. This appeal was generously responded to, all but three members agreeing to do so.

Our Annual Exhibition was not as good as usual ; but this was due to the fact that the members, having agreed to give their prize money to the Society, did not take the trouble to bring articles to exhibit, when they were to get no prize money.

Immediately after the Exhibition the Directors called a general meeting of the members to decide upon what breeds of rams and bull they should purchase, when it was decided to purchase Cotswold rams and a Durham bull.

After some correspondence with various breeders of pure-bred stock, the Directors purchased from W. T. Benson, of Cardinal, two Cotswold yearling rams, for the sum of $20 each. When these animals arrived the Directors were very much disappointed at their appearance. Mr. Benson wrote immediately after shipping them, stating that he had not seen them from the spring until he went to ship them, and that as they were not in as good condition as he expected, he returned us the sum of $10. These rams were placed, one in Grattan and one in Wilberforce, and were to be free to each member for a limited number of sheep ; but, owing to their inferior look, few members made use of them. The cost of bringing the rams here was $7, so that they stand the Society $18.50 each.

The Directors had a number of bulls offered them for sale ; but, from their experience with the rams, determined they would not purchase without first having them examined by some one on whose judgment they could rely, and the matter was entrusted to two of their number—Messrs. Wm. Hunt and Jeremiah O'Neill. On the recommendation of these, an eighteen-months-old bull was purchased from Thomas Murray, Esq., of Pembroke, for the sum of $150, the price first asked being $175. This bull was bought by Mr. Murray when in calf, in the western part of Ontario, and has a good pedigree. The Directors have every reason to believe that this purchase will give good satisfaction, as all who have seen it are well pleased. The wintering of the bull and the cost of bringing it from Pembroke will cause it to stand the Society in the spring the sum of $190.

The purchase of this stock has left the Society in debt to the amount of $24.80, with the keep of the bull to be yet paid for, and the Directors trust that the present members will assist the new Directors in obtaining as many new members as possible, so as to place the Society in a good position, and to enable them to purchase additional rams.

RUSSELL.

Your Board of Directors at this their annual meeting beg leave to report as follows:

They have much pleasure in stating that the Society for the year 1882 is in a flourishing and healthy condition. The Annual Exhibition held in Metcalfe last September far exceeded any former exhibition ever held in the county, both in exhibits and attendance of spectators. Especially in stock horses (particularly stallions), the show would have done credit to the Provincial. There was also a fine display of both single and double carriage horses, some of them being well matched. In other classes a great improvement was noticed to that of former years. The exhibit in cattle far exceeded last year, more especially in the Ayrshire and Durham classes.

Messrs. W. C. Edwards and Stephen Tucker, of the Township of Clarence, and Allen Paul, of the Township of Russell, three gentlemen, at a great deal of inconvenience and expense, brought their herds of both Durham and Ayrshire which added greatly to the exhibit in these classes. The Grade class is also improving fast, especially in the Township of Osgoode. Those exhibited from that section show great improvement. The Agricultural Society of that township for the last few years have devoted their funds in the purchasing of Durham bulls and placing them in different parts of the township. The effect is now seen and realized that there is in the hands of the farmers a high class of Grades. Sheep did not show any very great improvement over last year, notwithstanding there was a very fine exhibit. In the hall there was a very fine display of dairy products, more especially in butter; the exhibit both in tub and rolls and prints, they feel safe in saying, both in quantity and quality, being second to no other county.

Grain and Roots.—The exhibit was not large, but what was shown was good in quality. The Messrs. Graves, of Gloucester, made an excellent exhibit in vegetables. Potatoes were not as good as former years, the crop not being as good as last year; not yielding as large in quantity, and affected in a good many instances with rot and decay, which was noticed at the time of digging.

They are glad to say other growing crops have been on an average good, excepting Fall wheat, a great deal of it being killed out by winter and spring frosts; so much so that a large area of land was ploughed up and re-sown with Spring wheat, which turned out to be an average yield.

The Society held its annual ploughing match in October. The entries generally were from those who had not ploughed at matches in other years. The work throughout was well done.

The Directors cannot close their Report without expressing in the most grateful terms their thanks for the many special prizes given to your Secretary by many gentlemen from the city of Ottawa and other places, which assisted and greatly added to the prize list, and in making the Exhibition so great a success. And they also cannot allow the opportunity to pass without expressing their feelings of admiration and respect, coupled with "*thanks*," for the great interest, both by his means and time given, to W. C. Edwards, Esq., of Rockland, to advance the interests of the Society.

Your Directors would in conclusion urge upon those that take an interest in the prosperity of the Society to at once adopt means for the purpose of procuring grounds, fencing in the same, and buildings suitable for exhibition purposes; by doing so the funds of the Society would be greatly augmented by the large receipts of entrance fees that would be taken at the gate, which at present they do not get the benefit of.

Russell.

The Annual Show, held at Duncanville in the month of October last, was scarcely equal to former years in the number of entries, but in quality the articles and animals shown were very good, and on the whole very creditable to the township.

The display of horses was very fine indeed, the teams being well matched and appearing in fine condition.

The horned cattle shown were equal to former years, although in this class there is certainly room for great improvement.

In sheep and swine the numbers were not so large as some former Exhibitions; but amongst those shown were some very fine specimens.

Grain, seeds and roots were well represented; potatoes in particular, we are proud to say, could not hardly be surpassed.

The show of garden vegetables was not so extensive as could be wished, but of good quality; onions in particular being the best ever exhibited in the township.

In dairy produce there was an unusual interest manifested. There were more entries made in this branch of industry than at any of our previous Shows. Much credit, however, for the interest taken in this class, is owing to some of the magnificent special prizes offered for the best firkin of butter.

In poultry some very fine specimens were exhibited, although deficient in number.

The show of fruit exceeded our expectations, especially in apples, of which we had a large and magnificent display.

The display of fuscias, geraniums and green-house plants was very good, and commanded the attention and admiration of all visitors. The show of flowers grown in the open air was very good, considering the lateness of the season. There were, however, some very handsome bouquets, petuneas and verbenas on exhibition.

The display made by the ladies was never more conspicuous than on this occasion. The richness of their embroidery and fancy work, and the neatness and artistic skill displayed in all branches of their department, far outshone in beauty and brilliancy their former efforts. Indeed parties who had visited the Provincial Exhibition in Kingston felt satisfied that the ladies' department at Russell would lose nothing by a comparison with that of the Provincial Emporium.

SIMCOE, EAST.

The Directors of the East Simcoe Agricultural Society, in compliance with the Act, have much pleasure in submitting their Annual Report, and have again to congratulate the Society upon a very satisfactory state of affairs during the past year. The progress which has attended the Society ever since it became the possessor of grounds and buildings of its own, has been very marked, as you observe by the following figures of gate receipts:—In 1877 the gate receipts were, $82; in 1878, $203; 1879, $218.61; 1880, $232.62; 1881, $304; 1882, $519. Thus in five years the receipts from that source alone have increased nearly seven-fold. The Directors have much pleasure in informing you that the other receipts have also increased, and they have again to thank the merchants and others for very liberal subscriptions to the prize list. A considerable amount of money has been expended during the year in the erection of forty-five new cattle stalls, which were necessary and which were all filled at the late Exhibition. It is a matter for congratulation that the late Fall Exhibition is reported to be second to none in the county, and the judges present from older counties were highly pleased with it, and also with the buildings and grounds. The total number of entries were much in advance of those of last year. In horses, each class was well represented as to numbers, but we cannot say much for the quality of the animals; the great call upon the farmers last year for general purpose and draught horses for the North-West, has left this part of the country poor in these classes. The roadsters, also, were not up to former years, from the same

cause. There was a fine exhibit of cattle, the Durham breed coming well to the fore this year; Ayrshires were more numerous, but the Devons seem to have fallen off; Herefords were conspicuous by their absence. In the grade class the Durham strain was particularly noticeable, and the competition keen. The fat cattle were fine specimens and reflected credit on their raisers. The entries in the different classes of sheep were much larger than on former occasions, and the animals shown were of a superior kind; a breeder from Muskoka taking off quite a number of prizes. The show of pigs was about the same as in other years, the honours being divided between three or four exhibitors: T. Whipps, of South Orillia; J. Rutherford, of Rugby; and the Calverleys, of North Orillia, being particularly fortunate. In agricultural implements, quite a number of the agricultural implement factories of Ontario were represented. The show of poultry was not much of an improvement on last year; there is still plenty of room for improvement in this class, and our farmers ought to take advantage of it, as it can be made a most profitable branch of their business. In grain, the entries were far in advance of former years, and the samples shown of a superior quality, particularly in fall wheat, oats, barley, peas, timothy and clover seed were well represented,—in fact, the total number of bags of grain exhibited were more than double the number shown at Toronto. In field produce and horticulture, the exhibits were numerous and of excellent qualities. There was a grand display of fruit, the best ever made here, which clearly demonstrates the fact that fruit can be grown in the north as well as the south. Last year there were three entries in grapes, this year there were eleven, several of the exhibitors showing ten or twelve different kinds, and all of them of a good quality of grapes, the Rogers' Hybrids predominating.

In the dairy department there was a marked improvement over last year, and the judges were sorely tried in thier duties, the competition being wonderfully keen; the premier honours being carried off by Mrs. Daniel Cotton, who has been the first prize-taker for several years past. The first prize for factory cheese was awarded to the Edgar factory; J. Brennan carrying off first prize for the home-made article.

In ladies' work there was a fair show, and in the fancy work department a large number of entries, and of a much improved quality. We noticed a lot of old things that have been shown year after year for the last five or six years; we would like to see the farmers' daughters and wives turn out a lot of new work for next show; there is no department in which more interest is taken, and it ought to be in their interest, then, to make it more attractive. * * *

SIMCOE, WEST.

In the Treasurer's balance sheet, which has been duly audited, and will be laid before you, you will notice that the balance on hand is considerably less than at the last annual meeting, which is accounted for by the withholding of its usual grant by the Corporation of Barrie, and by extra expenditure, which could not well be avoided; notwithstanding, there is a balance on hand after paying all demands of upwards of $90. The Directors have again to thank the merchants, hotel-keepers, and others of Barrie, for their very liberal support, and would earnestly solicit a continuance of it.

The Exhibition was successful. The entries were in excess of last year, and the receipts at the gates larger.

With the exception of horses, the show of stock of all kinds was remarkably good, both in numbers and quality, although some of our most extensive breeders were absent with their herds at the Provincial and other Exhibitions.

West Simcoe has long been noted for its superior breed of stock, and our Exhibitions prove that these are increasing every year in numbers and excellence through the Riding, and no small credit of this is due to this Association, by the liberal manner it has from year to year encouraged the introduction of thoroughbred stock into the county.

The show of grain, though not very large, was equal to or above the average of preceding years in the quality of the exhibit.

Owing to the backward season, the time of holding the Exhibition was too early for roots, garden produce and fruits, therefore, although fine specimens grown in favourable situations were brought forward, competition was lacking, and the display not so great as in formers years.

The meagreness of the show of manufactures and implements may be accounted for by the fact that Diplomas only were offered as prizes. Your Directors have not had the means at their disposal to offer money prizes in these classes. They considered that the manufacturer and agent would be repaid for any trouble or expense they might incur in exhibiting by the publicity the exhibition would give to their wares.

The departments of dairy produce, ladies' work, fine arts, etc., were fairly well filled, and attracted a good deal of attention, as also did a very fine case of silver ware and jewellery exhibited by Messrs. Sanders Bros., of Barrie.

The attention of the members is again called to the fact that the Town Park will not likely be available for Exhibition purposes again, and in view of this some steps should at once be taken to secure suitable grounds, permanent or otherwise, for the use of this Association.

The question of increasing the membership and extending the usefulness of the Association has from time to time been discussed by your Directors, and various suggestions made and acted on, but without the desired result. They can now only leave the matter in your hands, and in the hands of their successors in office.

The Directors have pleasure in calling your attention to a circular issued by the Agricultural and Arts Association of Ontario, which will be laid before you, offering prizes for the best laid out and cultivated farms. West Simcoe can boast of as fine farms as there are in the Province, and it is to be hoped, for the credit of the Riding, that the owners will not be backward in entering the lists for competition.

Flos.

The President, Vice-President and Directors of the Agricultural Society of Flos have much pleasure in submitting this the first report of the above Society.

When you elected us to office one year ago, we felt that a prosperous Agricultural Society could be formed and supported in Flos, and we are happy to state that the result has far exceeded our most sanguine expectations; it only requires the same degree of energy and determination to place the Flos Farming Society among the foremost township societies in the country.

It gives us pleasure to congratulate you on the abundant harvest that a bountiful Providence has been pleased to send in the past year, crowning the labours of the farmer with joyful success.

Vespra.

After paying off all demands there is a balance in hand of $52.69, being less than for some years. The Legislative grant was $98.20 against $140 last year, and the prize lists amounts to more than last year, which accounts for the diminished balance. There is also a balance in hand of $22 on ploughing match account.

The Exhibition proved very successful and gave general satisfaction. The grounds were crowded with splendid stock, and the hall was full to repletion with the finest specimens of dairy products, garden produce, fruit, ladies' work, etc. The improvement in the Exhibitions from year to year, and the growing interest taken in them by the residents of the township is most satisfactory.

There is much reason for thankfulness for the bountiful harvest we were favoured with. The crop of Fall wheat was unprecedented in the township; as nearly as can be ascertained the average yield was fully 30 bushels to the acre. Other crops, though not so large, were over an average.

They would particularly call your attention to a circular issued by the Agricultural and Arts Association of Ontario, which will be laid before you, offering prices for the best laid-out and cultivated farms in the Riding. It would be very gratifying, and add greatly to the standing of the township, if some of our enterprising farmers would enter the lists and compete successfully for them.

SIMCOE, SOUTH.

Another year is added to the age of your Society. The year 1882, one of the most eventful, in a scientific point of view, on record, is numbered with its ancestry of the past.

Another great cause of thankfulness is added to the Giver of every good and perfect gift, in that He has by one of the most bountiful harvests of the past decade, filled your barns and storehouses with plenty.

Your Directors have much pleasure in being able to congratulate you on the continued prosperity and firm financial standing of your Society. You will see by your Treasurer's Report, that quite a respectable balance is placed to your credit after discharging every obligation.

During the past year your Directors held two Public Exhibitions. The Spring Exhibition was held in the Village of Bond Head, and was a decided success. The Fall Exhibition was held in the Society's Park, in the Village of Cookstown, on the 3rd and 4th days of October last, and was in every particular an improvement on the preceding one. The number of entries made by your Secretary was larger, and the amount of money collected at the gates far in excess of any previous year, showing the increased interest manifested by the public in agricultural pursuits.

The quality and number of horses of every class, and the thoroughbred Durham cattle exhibited, elicited the strongest eulogiums not only from the judges (who were gentlemen from a distance) but also from all spectators—indeed, the competition in these two classes was most praiseworthy.

The fine exhibition of thoroughbred sheep, Cotswolds, Leicesters, South Downs and other Downs, was a marked improvement on former years. The specimens shown, would do credit to Provincial or Central Fairs; and the competition in the several branches of this class was keen and well contested.

The improvement in the several departments of the swine class was not so marked. The animals shown were very good, but the variety not so extensive as should be. Berkshires and Suffolks were the principal varieties exhibited.

The poultry class was an improvement on the past years. There were some splendid specimens of the feathered tribe shown, but we think there is still room for greater improvements in this class.

The grain and seed exhibited were very fine, and the competition remarkably keen; none but judges of the most profound skill could discern the difference in some cases, but your Directory are pleased to be able to say that the gentlemen chosen were equal to the task.

The display of roots and vegetables was remarkably good, and was never outdone in this county, and your Directory believe they would compete favourably with those shown at the last great Central Fair in Toronto.

The dairy produce and fruit also claimed their respective places in the Exhibition, and maintained their self-respect very creditably.

Last, but not least, comes the ladies' department and the floral display, and to do justice to these it would require the ready pen of a Mrs. Stowe or some eloquent lady writer. We will simply remark, that these departments were superbly magnificent, and would reflect credit on any Provincial or great Central Exhibition; indeed, we feel assured that Simcoe's fair daughters will never be left behind in refinement and progress.

In conclusion, your Directory desire to congratulate you on the bright future of your Society. It is a pleasing task for them to inform you that the Innisfil Branch has amalgamated with your Society, so that with the Essa and Innisfil Branches at your back, your Directory for 1883 may announce your next Fall Show as a grand Central Exhibition, and we feel certain, that if you do your part, no Central Fair in Ontario can surpass you. You have the material, gentlemen; use it then, and let old Simcoe take her proper place in the front rank of Ontario.

TORONTO.

Your Directors, in submitting their Report for the past year, cannot but feel gratified at the success which has again attended their endeavours to stimulate and encourage the science of horticulture in its various branches.

As the Summer Flower Show of the year previous had proved such a decided success, it was determined to hold another last year. With this object in view, your Directors approached the Toronto Horticultural Society, and an arrangement was made similar to that of the preceding year, for this Society to join with yours in holding the Third Annual Union Flower Show in the Pavilion at the Horticultural Gardens, on the 28th and 29th of June.

With the desire to draw out a better quality, as well as the rare and more expensive class of plants and flowers, your Directors again increased the amount of the prizes to be offered, bringing up the total prize list to nearly $1,000, thus making it one of the most liberal prize lists ever offered for a Midsummer Exhibition of a like kind by any Society in the Dominion.

That vast strides have been made of late years in horticulture, both by professionals and amateurs, is evidenced by the fact that the Exhibition surpassed in many respects that of last year, which, considering the late spring, and the inclemency and backwardness of the summer, is no small praise.

The general effect upon entering the building, or as viewed from the galleries, was one long to be remembered, and one which could not fail to satisfy every lover of the beautiful.

From the fact that these Annual Shows, owing to their excellence, are increasing their popularity, and are beginning to be looked upon as a recognized social event, your Society has reason to feel both gratified and encouraged in the efforts it is making from year to year to fulfil the duty expected of it—that of educating the public mind up to a higher standard of the true and the beautiful in Nature and in Art.

The band of the Queen's Own carried out on both evenings of the Show an admirably selected programme of choice music, which added greatly to its attractions.

The total number of entries in all the classes was 336, being 41 less than last year, whilst the money prizes awarded were over $125 more than the year previous.

Mr. Paxton, the Superintendent of the Horticultural Department, to whom is due the successful carrying out of the arrangements of the tables, plants and flowers, etc., submits the following report on the exhibits :—

"The many rare and beautiful exotic and flowering plants exhibited, were in the very best condition for gardeners, professional and amatuer, and the flower-loving public to examine, study and emulate.

"No one can doubt that the rapidly developing taste for beautiful flowers among our citizens, has been advanced in a very great measure by the Summer Flower Shows of the Electoral District Society. It would be tedious to enumerate the various rare and beautiful specimens exhibited on this occasion, or to name their owners and growers ; suffice it to say, that all the plants shown gave abundant evidence of the most careful cultivation.

"The display of Geraniums, Petunias, and other flowering plants which filled the whole of the north table, was a sight well worth seeing. Cut flowers were very fine, with the single exception of out-door roses, which, on account of our late spring, were not in bloom. Bouquets and floral designs were shown in excellent form, and the prizes well contested throughout. Some very fine strawberries and enormous gooseberries were shown from St. Catharines, among the former the 'Sharpless' is pre-eminent, and among the latter the 'Whitesmith' and 'Downing.' Apples were shown in a splendid state of preservation.

"Vegetables, at such an early season, were of necessity not as satisfactory as could have been wished for." * * * *

FINANCES.

The total subscriptions of members for the year (of which a list will be found hereto attached, with the amounts paid by each) was $209 ; and the amount awarded in prizes in the several classes (less diplomas taken in lieu of money), $468.75.

The detailed statement of the Treasurer, as examined and signed by the Auditors, shows total receipts for the year, including a balance of $825.72 from the preceding year, to be $1,886.87 ; and the expenditure, $1,207.94 ; leaving a balance in hand of $678.93.

In conclusion, your Directors have had under discussion the holding of a Fat Stock Show in Toronto, in 1883 ; and would respectfully suggest to their successors in office the desirability of assisting the project, as recommended in a communication from the Council of the Agricultural and Arts Association, by every means in their power.

VICTORIA, SOUTH.

Your Directors held two Exhibitions during the year 1882. The Spring Exhibition was a decided success in point of exhibits and visitors. The number of admissions at the gate was 492. The exhibits of horses and bulls was in the opinion of your Directors very satisfactory.

The Fall Exhibition was not, in the opinion of your Directors, quite equal to the standard of some previous years, but the attendance evinced a marked improvement, 1,805 persons having been admitted at the gates. This, to some extent, encourages your Directors to express an opinion, that the people of the county have a great interest in the success of our Annual Exhibition. The financial state of your Society will be laid before you by the Sec.-Treasurer, and your Directors are much pleased to report that the finances are in a satisfactory condition. Your Directors venture to urge, that their successors will use every effort to dispose of the property of the Society, situated in the South Ward, in the Town of Lindsay, on the best possible terms. Your Directors cannot close their report without tendering an expression of there hearty thanks to the County Council for the continued annual grant to your Society, a grant which has enabled your Directors to meet liabilities occurring from interest on mortgages, and further enabled them to pay in prizes to the people of the county the handsome sum of $515.25.

In now surrendering the trust which you reposed in them in 1882, your Directors avail themselves of this opportunity of thanking all classes of the community for their cordial co-operation, and the general desire to add to the prosperity of the South Victoria Agricultural Association.

WATERLOO, NORTH.

Your Directors regret that owing to some cause over which they had no control, the number of entries in all articles, except live stock, fell short by some hundreds compared with the last three or four previous years. As for live stock, our Show was far superior, both in numbers and quality, than was shown in any previous year, and was pronounced by outsiders who came to visit our Show from a distance that it was upon the whole superior to the last County Show held in an adjoining county.

Your Directors have reason to congratulate the members upon the financial standing of the Society. We have carefully avoided expenses that were not absolutely necessary. $960.25 is the amount of prizes awarded, which has all been paid except about $20, which would have also been paid had our Treasurer known where the parties resided, which is an increase of $74.25 in prizes paid over the previous year.

We may here state that Ayrshire cattle has been added to our list, and quite a number of first-class animals were exhibited ; and we would recommend the incoming Directors to add Jersey cattle, and also different kinds of sheep.

We have every reason to congratulate ourselves that our Show is holding its own, financially and otherwise, while many similar societies have materially fell short. It requires a little more public spirit to be infused in our public men, as well as our manufacturers, mechanics and farmers. All should put their shoulder to the wheel, and work harmoniously together, and our Shows would for all time to come be a success and a benefit to all.

We regret that we are compelled to notice some of our public men speaking sarcastically of our Show, as though it was going down and did not amount to aught. We would not have mentioned this had not one or more of our public men got up at the Council Board and said that the County Show did not do any good, and it was no good to the municipality to have the Show held within its precincts; but at the same time such of our public men are few and far between. Thanks to others, the towns of Berlin and Waterloo have given us liberal subscriptions as well as grants.

WELLINGTON CENTRE.

Your Directors, in meeting you, feel that they can congratulate you on the success that has attended the operations of the Society during the past year. The Nichol Society again united with yours, and contributed the sum of $144.75 to the funds, and the united Societies held their Annual Fall Show in Driving Park, Fergus, offering a prize list amounting to the sum of $697, of which sum $634.25 was awarded—the balance reverting to the Society for want of competition. The number of entries was 1,093, being an increase of nearly 200 over that of last year. This increase was general over all the departments, with the exception perhaps of heavy draught horses. The falling off in this class was doubtless caused by the prices that has been paid for this class of animals, and the large numbers of them that have been sold to leave this part of the country: and it may be well for the farmers to consider if they are acting wisely in thus depleting the country of our choice breeding mares, or if they are not killing the goose that has laid the golden egg. A goodly number of the stock shown were of more than local repute, many of them being well known prize-takers at the Provincial and Central Fairs.

The show of fat stock was held on the Fergus market ground, and it was also a decided success. A large number of very superior fat cattle, sheep and pigs were exhibited, headed by Mr. Armstrong's noble steer, that the next day carried off the silver cup of the Guelph Fat Stock Club. There was close competition in every department of the Show. The total amount of prizes awarded at both Shows was $695.75, of which the sum of $646.25 has been paid, leaving a balance of $37.50 as yet uncalled for. There is also an account uncalled for, amounting to $37, which when paid will leave a net balance in the Treasurer's hands of $41.05.

WELLINGTON, SOUTH.

The Directors, in presenting their Report for the past year, have much pleasure in congratulating the members upon the success which has attended their labours in the interest of the Society during the year. In the month of November previous to 1882 a meeting of the Directors and others interested in the success of the Central Exhibition was held in the City Hall, being called by the President, Mr. Gowdy, to take into consideration the then financial condition of the Society; as from the experience of the two previous years, he considered that some decided steps should be taken to relieve the Society from the debt still existing against it, before attempting to hold another Exhibition. A large number attended the meeting, and it was then resolved to appeal to the liberality of those favourable to its future success. The Directors and all ex-Directors of the Society were requested to solicit subscriptions towards liquidation of the debt; and the Directors have much pleasure in stating that their appeal was liberally responded to with few exceptions, and that subscriptions to the amount of $634.25 were paid over by the several collectors. In addition to this the Township of Guelph granted the liberal sum of $100, for the same object, which with the financial success of the Exhibition, shown by the statement herewith submitted, has enabled the Directors to meet all liabilities, and leave a surplus to the credit of the Society of $199.13.

The Show being held on the 3rd and 4th of October, under very favourable weather, was altogether a decided success, both as to the number of entries and the attendance of visitors, and in the interest manifested by all to make it in every way successful.

The show of horses was very good, many first-class animals in the different classes from other parts of the Province, being exhibited, great interest being taken by those present, particularly when the carriage and single horses were exhibited, owing to the very close competition of the animals and to the difficulty of the judges in awarding the first honours.

The show of cattle was not very large, but some very good animals were exhibited.

The show of sheep was decidedly good and large in number, both in the long wool Cotswold and Leicesters, and also in the different classes of Downs. This breed of sheep is now coming into great favour in Great Britain, and also in this country, owing in a great measure to their fine wool and superior quality of mutton. The Oxford Downs shown by Messrs. P. Arkell, of Teeswater, and H. Arkell, of Puslinch, were very fine, many of them being prize-takers in Great Britain previous to their importation here.

The exhibit of pigs and poultry was very good, and in numbers greater than in the two former years. The show of grain and seeds, if not extra large, was very superior in the samples exhibited, and the show of fruit, roots and vegetables has seldom been surpassed in any former year.

Dairy produce was large in the number of entries and superior in quality,

The merchants and manufacturers of Guelph deserve great credit for the large and fine display they made in the various articles exhibited by them, which added very much to the attraction of the Show. The ladies also deserve great praise for the very splendid exhibit made by them, both in the fine and domestic work, which tended very much to make the display in the place one which has seldom been excelled in former Exhibitions.

Guelph has this year been selected for the Provincial Exhibition, being a new departure from the usual custom of holding it alternately in the four principal cities of the Province. Such selection we are satisfied will be to its advantage, and as the breeders from this and adjoining counties have heretofore been large and successful exhibitors at the Provincial, we have no doubt that they will this year make still greater exertions to make this Exhibition one that has not yet been surpassed in former years We would however recommend our successors to use every effort, and give every assistance on their part to make it in every way successful. In reviewing the past season we have had an abundant harvest though a tedious one, and the root crop which in the early part of the season was very much injured by the fly, still it has been one of the best and largest crops ever grown in this part of Ontario. This crop is a very important one to the farmers of Wellington, in the production of beef and mutton, for upon this branch of farming much of our prosperity as farmers depends, and as we now find a profitable market in Great Britain for all the fat cattle and sheep we can raise, let us therefore still further improve our live stock by careful breeding; for in this respect there is still room for improvement, for it is only animals of good quality that will command the highest price and leave a profit to the feeder, and instead of depending upon a fluctuating and uncertain market for our coarse grains, let us use them more liberally in the future in increasing the supply of our fat stock and improving the quality of the manure heap; for after all this is the real N. P. to the farmers of Wellington, the foundation of all successful farming. In conclusion we again congratulate the members upon the success of our efforts to place the Society upon a sound financial basis, and by careful management in the future, learned by past experience, the Guelph Central Exhibition will undoubtedly be a success. All of which is respectfully submitted.

YORK, NORTH.

In presenting their Annual Report, your Directors have pleasure in being able to again congratulate you upon another successful year—successful not only in an agricultural and commercial sense generally, but also in regard to the operations of this Society financially and an increased interest in its Annual Exhibition.

By reference to the Treasurer's accounts herewith submitted, you will observe $200 more have been paid on purchase or capital account on grounds, thus paying off the entire debt on the land purchased from Mr. Seigley; and save and except $650 borrowed from Mr. Starr to cover loss sustained some years ago by storm to buildings, all liabilities of the Association are met to this date.

The expense and repairs accounts are larger this year than usual. During last winter and spring several rods of fencing were destroyed by storm, and other sections damaged, necessitating considerable unnexpected outlay, both for material and labour. The entire premises are now in excellent condition.

During the past year arrangements were entered into between this Association and the Township of Whitchurch Agricultural Society for a Union Exhibition, and although naturally involving increased expense in management to some extent, yet, on the whole your Directors are pleased to report, resulted satisfactorily to both Associations, and in increased interest at the Annual Exhibition held in October last. The combined Board made special efforts to enlarge and classify the prize list, and in this respect their labours were crowned with a large measure of success. Not only the merchants, manufacturers, and business men of Newmarket, by liberal donations, materially aided your Board in offering an unusually large prize list; but the Members for the Riding and a large number of business and public-spirited men from Toronto also contributed for this purpose, whose names and contributions appeared in the list of premiums offered. Your Board take this opportunity to publicly acknowledge the beneficience of these donors in aid of the Association last year—an acknowledgment your Board have every confidence in believing is heartily seconded by the membership generally. By the aid thus afforded, nearly $200 more was added to the prize list over the previous year; and notwithstanding this large increase—and notwithstanding $200 was paid on capital account, together with the additional expenses in management consequent upon union, also in unexpected repairs—it will be observed by reference to the Treasurer's statement, there is still on hand a surplus of ($142.35), one hundred and forty-two dollars and thirty-five cents, to the credit of another year. From the result of the union, therefore presenting increased competition, a larger show, and the saving of time effected, your Board entertains the conviction that the combined arrangement with Whitchurch may be pronounced a success, and would be followed with even more marked results were the adjoining Township of East Gwillimbury to follow the example thus set by Whitchurch last year, and the two Township Associations unite with North York in one good show the coming year.

The Union Fall Show last year was held on the 3rd and 4th days of October, when 2,004 entries were made in the several classes for competition, as follows:—

Horses	231
Cattle	73
Sheep	100
Swine	48
Poultry	122
Grain and Seeds	152
Roots and Vegetables	328
Fruits, Domestic Wines, etc	304
Dairy Produce	91
Implements, Carriages, and Manufactures	117
Domestic Manufactures	146
Ladies' Work, Fine Arts, etc	254
Extras, not classed	38
Total	2,004

These figures indicate that the various classes were well sustained, and furnish some general idea of the extent of the competition.

Your Board entertains the conviction that still further encouragement could be given with advantage to the Society and agriculturists generally by more marked preference being given to the encouragement of importers and breeders of thoroughbred stock, and would recommend this feature in the future be observed in preparation of prize lists,

especially in regard to cattle. Indeed, in this respect, the opinion appears to prevail that prizes for grade bulls, in future, should be discontinued.

On the first evening of the Fall Show the Main Building was thrown open for visitors, and was filled by residents of Newmarket who were unable to attend during the day time; and, although adding somewhat to the expense account, the admission fees more than covered the outlay and added to the interest of the public in the Exhibition.

For some years past the Agriculture and Arts Association have been awarding prizes in this Province for the best managed farms. To do this with a certain degree of fairness the Province was divided into groups, of which the Electoral Districts of Peel, Cardwell, North York, East York, West York, East, West and South Simcoe, Algoma, Muskoka and Parry Sound, North and South Ontario, and East and West Durham form group No. 4, and this year the Association's prizes will be awarded in this group. Particulars regarding manner of competition, etc., will be presented to the meeting in a circular which has been forwarded to this Board by the Secretary of the Provincial Association Board. Your Directors would urge upon the farming community of this Electoral District the propriety of competing for these prizes. No Society, however, can send more than three competitors. Any number can send in their names to the Secretary of this Board, and the latter must decide on which three they will send forward as competing farms. Your Board would like to see the medals of the Association come to this District. The Provincial Association also offer prizes for Essays "On the most Practicable Means of Improving the Quality of Butter in Ontario," and "On the Increasing Tendency of the Times for Farmers' Sons to leave the Occupation of their Fathers for Other Pursuits: its cause and remedies." The rules governing competitors will also be laid before you by your Secretary. * * * *

Gwillimbury, East.

The Township of East Gwillimbury Agricultural Society held a Spring Show of entire horses and bulls. It was a very successful show. There were some very fine animals on exhibition which gave great credit to the owners.

The Fall Show was good, there being an extra lot of horses and cattle. A small entry of pigs and poultry, grain and seeds were good and the quality extra. The root crop was fair, not extra this year. The entries of the dairy were small, but the quality good. Fruit crop was small this year. Also a small quantity of agricultural implements on exhibition, and a good display of general manufactures which was admired by all. The fine arts was fair. The ladies' work was extra good. On the whole it was considered one of the best Exhibitions that the township ever had.

The Spring and Fall Exhibitions were held in the Village of Queensville.

Whitchurch.

Your Directors in rendering an account of their stewardship for the past year have but little to say.

In obedience to an expression of the last annual meeting your Secretary wrote to a gentleman in Aurora in reference to holding a Fall Show in that village, which proposition was answered through their local paper, that the villagers intended holding a show of their own.

Your Directors are of opinion that uniting Township and County Societies, when practicable, accomplishes the most good in the least time; and acting on this principle, your Society joined the North York Society for a Union Show, which was held in Newmarket, and resulted in a success.

Inasmuch as the Agricultural Commission has faithfully reported and distributed the information by them obtained on agricultural and manufacturing interests, your Directors do not think it worth while to duplicate what has already been reported.

The terms agreed upon leave your finances about the same as reported last year. With the capital now in the Treasurer's hands, and a reasonable effort on the part of the patrons, the Society has a bright prospect for the future.

YORK, WEST.

We united with the Vaughan Agricultural Society on the same terms as usual, and held two successful Exhibitions during the year. One in the spring, which, although the classes to be represented were limited, as is always the case at Spring Fairs, still the number of entries was large and the interest taken in the animals and implements was livelier than heretofore. The exhibit of reapers and mowers was considerably larger than at any previous Exhibition.

The Fall Fair was the most successful of any ever held by the Society, both in the number of entries made, which was over 2,000, the receipts at the gates and on the grounds, which amounted to nearly $1,000, and in the membership of the Society, which was nearly two hundred besides nearly one hundred members of the Vaughan Agricultural Society, making a total membership of almost 300.

The amount paid out in prizes was much larger than in previous years, being almost $300 more than in 1881. Notwithstanding the increased outlay your Society is in better standing financially than at the beginning of the year. Altogether we have to congratulate you on the very successful termination of the year's business.

TABULATED ANALYSIS OF REPORTS

OF

Electoral District & Township Agricultural Societies

AND OF

HORTICULTURAL SOCIETIES,

FOR THE YEAR 1882.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c	$ c.	$ c.
Addington:		114 00	700 00							814 00	20 48
Camden	16 83	104 00	140 00							260 83	2 32
Loughboro'	4 37	68 00	70 00							142 37	2 13
Portland		50 00	70 00							120 00	0 44
Sheffield	4 46	65 00	70 00							139 46	
Brant, North:	784 87	376 50	700 00	1100 00	494 90				131 37	3587 64	
Onondaga	5 33	76 50	140 00	20 00	12 75					254 58	
Brant, South:		293 00	700 00	500 00	808 70	1070 00			615 60	3987 30	184 03
Burford	21 17	329 50	140 00	438 50						929 17	
Brantford Horticultural	3 03	77 50	140 00		6 30					226 83	
Bruce, North:*	79 50	80 00	700 00							859 50	
Union Exhibition	79 50	256 75	79 18	200 00	535 31		10 10	370 50		1531 34	
Amabel and Albermarle		84 00	34 74		30 15					148 89	
Arran	22 27	175 50	63 35	30 00	72 14					363 86	
Bruce		228 25	93 35	40 00	106 20				6 00	473 80	88 75
Saugeen	9 41	72 00	28 00		51 00				13 99	174 40	
Port Elgin Horticultural	10 00	109 00	50 00	75 00	160 45			16 25		420 70	
Tiverton Horticultural	11 65	177 00	70 48		4 50					263 63	

* United for Union Show in Paisley.

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurer.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Produce.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Addington	17 50	350 00	198 75	68 50	132 55	.....	.....	.....	.....	.....	67 18	834 48	.....
Camden	.....	.....	123 50	47 75	64 40	.....	.....	.....	.....	.....	27 50	263 15	.....
Loughboro'	.....	.....	54 75	29 60	24 60	.....	.....	.....	.....	5 00	30 50	144 50	.....
Portland	8 54	.....	51 85	12 70	29 35	.....	.....	.....	.....	.....	18 00	120 44	.....
Sheffield	.....	.....	56 25	23 25	38 90	.....	.....	.....	.....	.....	17 65	134 05	5 44
Brant, North	.....	140 00	819 00	174 25	190 75	.....	.....	.....	.....	1938 19	260 14	3522 30	65 34
Onondaga	.....	.....	141 25	45 00	26 00	.....	.....	.....	.....	.....	31 58	243 83	10 75
Brant, South	141 36	280 00	976 50	355 00	177 50	.....	255 50	.....	.....	1168 87	816 60	4171 33	.....
Burford	.....	.....	*327 00	96 75	93 75	.....	26 25	.....	.....	11 26	136 87	667 88	261 29
Brantford Horticultural	.....	.....	.....	113 00	.....	.....	.....	.....	.....	10 00	72 39	195 39	31 41
Bruce, North	.....	420 00	.....	.....	.....	.....	.....	.....	273 31	.....	64 90	758 21	101 29
Union Exhibition	.....	.....	553 00	180 25	204 00	.....	5 00	13 42	.....	99 07	327 15	1371 89	159 45
Amabel and Albermarle	.....	.....	31 10	17 70	16 30	.....	.....	.....	.....	14 87	18 00	97 97	50 92
Arran	.....	.....	118 00	85 25	66 25	.....	.....	.....	.....	5 32	67 42	342 24	21 62
Bruce	120 56	.....	†266 50	.....	.....	.....	8 50	.....	.....	87 66	79 33	562 55	.....
Saugeen	.....	.....	.....	.....	.....	.....	.....	.....	100 00	.....	9 00	109 00	65 40
Port Elgin Horticultural	.....	.....	.....	.....	.....	.....	.....	.....	398 00	.....	.....	398 00	22 70
Tiverton Horticultural	.....	.....	.....	140 00	.....	.....	.....	55 00	.....	25 00	25 50	245 50	18 13

* $24.00 unpaid.

† Prizes not classified.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies. – *Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Bruce, South :*	13 30	268 50	700 00							981 80	
Northern Exhibition	166 10	512 25		300 00	1713 99	250 00		740 00	91 39	3773 73	
Brant*	0 10	56 00	24 10							80 20	
Carrick		195 00	81 00	60 00	48 80				58 00	442 80	
Greenock		160 00	56 95	50 00	72 05				14 75	353 75	
Huron	17 89	217 75	95 25	30 00	40 75				20 00	421 64	61 08
Kincardine	39 64	39 75	35 90	20 00	15 67				43 70	194 66	
Kinloss	284 60	214 00	87 75	80 00	160 95				10 75	838 05	
Walkerton Horticultural*	10 00	87 00	38 10							135 10	
Brockville, E. D.:	108 10	460 00	700 00	100 00	463 87					1831 97	
Cardwell :	120 75	101 00	700 00	25 00	302 30			331 35	139 20	1719 60	
Adjala	75 86	81 00	113 40	25 00	17 95					313 21	
Albion		40 00	56 00	50 00						146 00	
Tecumseth†	120 75	100 00	110 60	25 00					62 72	419 07	
Caledon	83 80	133 50	140 00	150 00	229 62				135 40	872 32	
Carleton :	204 36	456 00	700 00	250 00	447 00					2057 36	
Fitzroy		90 00	105 00							195 00	
Gower, North	13 97	125 00	105 00		21 22					265 19	
Huntley	0 94	149 50	105 00		32 00					287 44	
March	3 27	83 00	105 00						9 93	201 20	
Cornwall, E. D. :	103 64	136 00	350 00		172 70		‡800 00			1562 34	

* United with Northern Exhibition.
† United with E. D. Society.
‡ Sale of Grounds.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Bruce, South:	.....	419 55	.....	.....	.....	.....	.....	.....	545 00	.....	7 56	972 11	9 69
Northern Exhibition	.....	.....	*757 75	399 35	494 25	.....	179 75	.....	.....	977 44	941 25	3749 79	83 79
Brant	.....	.....	.....	.....	.....	.....	.....	.....	73 00	.....	6 00	79 00	1 20
Carrick	12 25	.....	188 00	82 50	35 25	.....	.....	.....	.....	.....	60 55	378 55	64 23
Greenock	0 87	.....	80 50	75 50	39 50	.....	.....	.....	.....	87 00	45 69	329 06	24 69
Huron	.....	.....	185 50	73 75	39 25	.....	.....	.....	.....	.....	61 25	359 75	61 89
Kincardine	.....	.....	75 05	36 75	11 00	.....	4 20	.....	.....	.....	31 28	158 28	36 38
Kinloss	.....	.....	126 00	68 00	42 80	.....	.....	.....	.....	125 00	140 11	501 91	336 14
Walkerton Horticultural	.....	.....	.....	.....	.....	.....	.....	.....	122 00	.....	2 50	124 50	10 60
Brockville, E. D.	.....	.....	533 00	270 00	391 75	.....	147 38	.....	.....	.....	371 58	1713 71	118 26
Cardwell	.....	420 00	457 35	226 00	142 75	.....	5 00	.....	.....	100 00	305 77	1656 87	62 73
Adjala	.....	.....	87 00	44 00	31 25	.....	.....	.....	.....	5 00	71 05	238 30	74 91
Albion	24 54	.....	33 00	.....	.....	.....	.....	.....	.....	11 50	31 68	103 72	42 28
Tecumseth	.....	.....	.....	.....	.....	.....	.....	.....	356 35	.....	62 72	419 07	.....
Caledon	.....	.....	207 75	109 90	177 25	.....	.....	.....	.....	.....	289 07	783 97	88 35
Carleton:	.....	420 00	562 00	141 00	312 00	.....	.....	.....	.....	388 54	199 65	2023 19	34 17
Fitzroy	3 54	.....	†88 75	105 25	33 50	.....	.....	.....	.....	.....	51 46	190 18	4 82
Gower, North	.....	.....	87 80	64 87	39 50	‡40 25	.....	.....	.....	.....	29 21	261 63	3 56
Huntley	.....	.....	153 90	42 40	50 90	.....	.....	.....	.....	2 00	38 00	287 20	0 24
March	.....	.....	119 62	55 65	.....	.....	.....	.....	.....	.....	21 25	196 52	4 68
Cornwall, E. D.	.....	.....	193 75	96 00	97 50	.....	.....	.....	.....	954 40	186 87	1528 52	33 82

* $60.25 Prizes unpaid.
† $92.32 Prizes deducted.

‡ $5.25 for best kept farm.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Dufferin:	108 71	436 00	700 00	200 00	731 50	.....	.....	.....	10 85	2187 06	.....
Melancthon	179 00	203 00	140 00	100 00	247 08	.....	.....	.....	25 00	894 08	.....
Dundas:	282 31	350 00	700 00	.....	282 60	.....	.....	.....	2 00	1616 91	.....
Matilda	163 72	250 00	140 00	.....	166 35	.....	.....	.....	.....	720 07	.....
Williamsburg	126 18	182 00	113 50	.....	160 30	.....	.....	.....	.....	581 98	.....
Winchester	.....	292 00	140 00	.....	183 00	100 00	.....	.....	.....	715 00	136 82
Durham, East:	9 50	159 00	700 00	140 00	145 20	.....	.....	.....	.....	1153 70	.....
Cavan	15 00	72 00	140 00	.....	104 00	.....	.....	.....	.....	331 00	.....
Manvers	62 40	91 00	140 00	.....	90 41	.....	.....	.....	.....	383 81	.....
Hope	30 64	115 18	140 00	.....	.....	.....	.....	.....	.....	285 82	.....
Durham, West:	.....	116 00	700 00	.....	727 43	.....	.....	132 60	.....	1676 03	147 11
Cartwright	79 20	202 00	140 00	.....	168 95	.....	.....	.....	.....	590 15	.....
Clarke	123 06	166 00	140 00	72 00	238 00	.....	.....	.....	19 00	758 06	.....
Darlington *	.....	83 00	62 50	.....	.....	.....	.....	.....	.....	145 50	.....
Elgin, East :†	74 56	339 00	700 00	.....	.....	.....	.....	.....	.....	1113 56	.....
Southern Exhibition	3 58	836 00	.....	500 00	2985 15	.....	.....	451 41	168 50	4944 64	.....
Bayham	7 01	81 50	30 15	.....	90 25	.....	.....	.....	16 00	224 91	.....
Dorchester, South	.....	156 00	49 53	.....	27 95	.....	.....	.....	.....	233 48	1 62
Malahide	91 77	383 00	125 58	.....	291 68	600 00	.....	.....	25 00	1517 03	.....
Yarmouth	.....	285 00	107 65	.....	.....	.....	.....	.....	.....	392 65	.....
St. Thomas Horticultural	.....	138 00	46 41	.....	.....	.....	.....	.....	.....	184 41	.....
Springfield Horticultural	118 19	166 00	57 33	25 00	135 00	.....	.....	.....	.....	506 72	.....

* United with E. D. Society.

† United with Southern Exhibition.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Dufferin:		140 00	489 00	317 00	235 55		62 00			619 33	223 75	2086 63	100 43
Melancthon			179 50	100 00	138 90					156 45	112 30	687 15	206 93
Dundas		393 50	427 50	80 90	109 75					191 97	170 21	1373 83	243 08
Matilda			187 50	78 50	98 25		33 84			14 50	93 75	506 34	213 73
Williamsburg			140 25	34 90	58 65					55 25	54 60	343 65	238 33
Winchester	163 32		193 80	42 95	52 80		1 00			328 96	69 09	851 82	
Durham, East:		420 00	381 00	69 00	156 50						109 00	1135 50	18 20
Cavan			235 00	41 00	36 00						40 00	352 00	21 00
Manvers			110 50	75 75	57 50					53 75	36 31	333 81	50 00
Hope†			*35 00						100 00	80 00	56 00	271 00	14 82
Durham, West:	152 25	342 50	538 00	282 50	236 75				29 70	103 93	137 51	1823 14	
Cartwright			202 75	80 75	106 75		4 75			25 00	70 03	490 03	100 12
Clarke			263 00	104 00	120 75						135 96	623 71	134 34
Darlington									132 60		12 90	145 50	
Elgin, East ‡		466 90							556 00		5 00	1027 90	85 66
Southern Exhibition			1639 50	858 50	437 00					477 42	1507 19	4919 61	25 03
Bayham			63 86	33 09	12 21		13 41				27 21	149 78	75 15
Dorchester, South	12 54		121 25	27 75	19 00					31 00	23 56	235 10	
Malahide			263 25	96 45	88 90		32 90			860 14	110 36	1421 95	95 08
Yarmouth									331 00	45 75	25 26	392 01	0 64
St. Thomas Horticultural									184 41			184 41	
Springfield Horticultural			92 25	41 80	32 90		18 75			198 57	50 12	434 39	72 33

* Spring fair. † United with E. D. Society for Exhibition. ‡ United with Southern Exhibition.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Elgin, West:		247 00	700 00		723 06				210 60	1880 66	48 21
Aldborough	120 60	141 00	140 00		315 75					717 35	
Southwold and Dunwich	199 69	170 00	140 00		67 35		750 85			1327 89	59 90
Essex, North:	52 42	241 00	700 00	100 00	363 15			116 00		1572 57	
Rochester and Maidstone	87 57	128 00	159 71							375 28	
Sandwich and Maidstone	373 27	115 00	144 25			200 00	26 40			858 92	
Tilbury, West	15 77	117 00	115 92		55 10	81 00			1 00	385 79	
Essex, South:	41 62	201 00	700 00	125 00	217 62					1285 24	
Colchester, North		1048 00	32 50	500 00					18 40	1598 90	
Colchester, South	154 50	156 50	78 75		154 50				146 42	690 67	21 78
Gosfield	94 10	238 50	129 53		215 92		1 46		200 00	879 51	75 30
Malden and Anderson	48 77	71 00	39 13							158 90	
Mersea	524 19	378 00	140 00		185 70		122 85		40 75	1391 49	
Frontenac: *	627 02	278 00	700 00						28 40	1633 42	
Storrington†	13 10									13 10	
Grenville, South:	13 83	383 00	700 00	100 00	628 65				118 50	1943 98	
Edwardsburg	52 38	81 26	140 00	20 00	88 40					382 04	
Glengarry:	42 76	313 50	700 00		313 75					1378 01	
Lochiel and Kenyon	0 37	63 00	140 00							203 37	

* United with the Provincial Exhibition.

† Held no Exhibition.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Produce.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Elgin, West	110 52	280 00	510 25	111 10	207 00	.....	34 65	.....	.....	250 00	415 35	1928 87	.....
Aldborough	.....	.....	189 30	45 00	36 70	.....	29 25	.....	.....	326 73	87 27	714 26	3 09
Southwold and Dunwich	.....	.....	*162 25	39 70	91 10	.....	11 00	934 04	.....	22 75	152 15	1387 79	.....
Essex, North	.....	419 88	310 85	86 00	75 00	.....	5 50	.....	134 40	.....	238 49	1270 12	302 45
Rochester and Maidstone	.....	.....	.....	.....	.....	.....	.....	93 50	.....	.....	26 00	119 50	255 78
Sandwich and Maidstone	.....	.....	.....	.....	.....	.....	.....	814 15	.....	.....	11 25	825 40	33 52
Tilbury, West	.....	.....	78 25	36 75	36 25	.....	2 50	.....	.....	140 00	91 46	385 21	0 58
Essex, South	.....	420 00	325 25	137 75	126 75	.....	.....	.....	.....	.....	171 81	1181 56	103 68
Colchester, North	.....	.....	.....	.....	.....	.....	.....	.....	.....	1431 30	.....	1431 30	167 60
Colchester, South	.....	.....	†63 98	46 05	16 35	.....	42 90	.....	.....	463 39	105 46	712 45	.....
Gosfield	.....	.....	181 75	46 65	47 10	.....	.....	485 00	.....	99 71	94 60	954 81	.....
Malden and Anderson	.....	.....	.....	.....	.....	.....	3 00	.....	.....	9 75	54 75	67 50	91 40
Mersea	.....	.....	158 20	99 45	104 57	.....	10 95	244 76	.....	418 72	147 75	1184 10	207 09
Frontenac	.....	.....	.....	.....	.....	.....	9 00	.....	962 40	132 78	130 70	1234 88	398 54
Storrington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13 10
Grenville, South	.....	‡160 00	304 00	185 00	238 00	.....	93 00	.....	.....	345 00	532 84	1857 84	86 14
Edwardsburg	.....	.....	112 25	119 25	46 25	.....	.....	.....	.....	.....	56 05	333 80	48 24
Glengarry	.....	140 00	387 00	123 00	144 37	.....	2 50	.....	.....	77 90	263 04	1128 81	249 19
Lochiel and Kenyon	.....	.....	96 45	62 08	16 76	.....	.....	.....	.....	.....	28 00	203 29	0 08

* $25.20, Prizes unpaid. † $25.15, Prizes unpaid. ‡ $20.00, County Grant.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Grey, North:	198 99	321 50	700 00	300 00	188 90	.....	.....	.....	.....	1709 39	.....
Derby	50 78	108 00	65 05	30 00	24 10	.....	.....	.....	.....	277 93	.....
Keppel	6 80	120 00	82 00	12 00	.....	.....	134 50	.....	.....	355 30	109 35
Sullivan	20 36	57 00	37 50	30 00	8 45	.....	.....	.....	.....	153 31	2 29
Sydenham	120 52	131 75	99 10	25 00	9 45	.....	.....	.....	.....	385 82	.....
St. Vincent	21 13	196 55	89 10	30 00	53 97	.....	.....	.....	.....	390 75	.....
Sarawak	36 95	67 90	37 50	10 60	3 95	.....	.....	.....	7 25	163 55	.....
Owen Sound Horticultural	158 20	170 00	73 80	98 30	.....	.....	2 00	.....	4 27	506 57	.....
Meaford Horticultural	21 66	110 75	70 70	.....	90 24	.....	.....	.....	.....	293 35	.....
Grey, South:	63 20	317 00	700 00	250 00	355 10	.....	.....	90 00	.....	1775 30	.....
Bentinck	.....	111 50	126 77	20 00	7 44	.....	.....	.....	.....	265 71	.....
Egremont	146 42	152 00	170 04	.....	.....	.....	.....	.....	.....	468 46	.....
Glenelg	113 55	197 30	147 69	20 00	79 03	650 00	.....	.....	.....	1207 57	69 56
Normanby	74 95	113 00	125 49	.....	9 25	.....	.....	.....	82 75	405 44	.....
Grey, East:	.....	156 00	700 00	250 00	286 50	600 00	.....	.....	23 10	2015 60	.....
Artemesia	6 78	121 20	62 63	42 38	8 90	.....	.....	.....	.....	241 89	.....
Euphrasia	107 20	94 25	84 82	.....	85 00	.....	.....	.....	51 50	422 77	.....
Collingwood	110 08	203 50	83 07	79 68	164 35	.....	.....	.....	.....	640 68	.....
Holland	.....	148 00	134 00	.....	.....	.....	.....	.....	.....	282 00	.....
Osprey	.....	71 00	60 07	.....	12 64	.....	.....	.....	.....	143 71	.....
Proton	59 74	153 50	93 32	.....	136 91	240 00	.....	.....	3 00	686 47	.....

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Produce.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
GREY, NORTH:		*570 00	†666 25							4 20	198 22	1438 67	270 72
Derby			83 75	59 25	25 00					11 50	55 40	234 90	43 03
Keppel			67 50	45 97	17 00			280 00			54 08	464 65	
Sullivan			62 00	42 50	20 00					1 90	29 20	155 60	
Sydenham			‡136 75	110 75	24 75		19 30			5 50	83 50	108 30	27 52
St. Vincent			‡220 50				27 25			26 95	32 25	306 95	83 80
Sarawak			48 75	34 70	22 75					2 00	23 80	132 00	31 55
Owen Sound Horticultural				189 00	51 50					7 00	125 90	373 40	133 17
Meaford Horticultural				148 00	18 75		4 25			28 00	91 45	290 45	2 90
GREY, SOUTH:		*570 00	75 00	175 50	131 25					308 55	275 23	1760 28	15 02
Bentinck			75 00	25 25	18 75						49 63	168 63	97 08
Egremont			126 25	49 50	53 50		1 75			2 00	49 30	282 30	186 16
Glenelg			60 75	55 25	33 00					1038 56	89 57	1277 13	
Normanby			112 25	83 75	74 75	20 00				1 50	78 41	370 66	34 78
GREY, EAST:	80 06	§570 00	240 56	150 75	79 25		10 50			641 10	156 39	1928 55	87 05
Artemesia			88 50	44 00	9 00					5 75	27 75	175 00	66 89
Euphrasia			106 75	61 25	64 25	31 00	3 00			31 00	81 69	378 94	43 83
Collingwood			204 75	95 00	86 25	35 50				37 30	103 77	562 57	78 11
Holland			84 00	93 50	42 25	3 00					29 57	268 05	13 95
Osprey	7 35		49 25	22 50	28 50					3 50	29 65	140 75	2 96
Proton			109 00	63 75	49 00		13 25			361 99	34 75	606 24	80 23

* $150.00, County Grant.
† Prizes not classified.
‡ $22.25, Prizes unpaid.
§ $150.00, Municipal Grant.
$25.50, Prizes unpaid.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Halton:	.....	385 50	700 00	200 00	949 10	.....	.....	.....	.....	2234 60	89 83
Esquesing	182 45	298 25	113 70	50 00	137 05	.....	.....	.....	.....	781 45	.....
Nassagawaya	34 36	235 00	112 50	.....	17 60	.....	.....	.....	12 00	411 46	.....
Nelson	.....	250 00	105 06	40 00	57 55	.....	.....	.....	.....	452 61	12 36
Trafalgar	123 62	224 00	88 75	.....	211 60	.....	.....	.....	.....	647 97	.....
Haldimand:	81 95	161 50	700 00	45 00	261 90	.....	.....	.....	.....	1250 35	.....
Cayuga, North	7 00	104 90	65 47	45 00	.....	.....	.....	.....	.....	222 37	.....
Dunn and Cayuga, South	27 72	101 50	50 51	25 00	14 50	.....	.....	.....	.....	219 23	.....
Rainham	81 39	191 00	70 46	25 00	119 00	.....	.....	.....	.....	486 85	.....
Seneca and Oneida	.....	251 00	124 64	50 00	20 00	.....	.....	.....	.....	445 64	129 78
Walpole	4 63	230 00	102 33	25 00	239 58	.....	.....	.....	.....	601 54	.....
Hamilton, E. D.:	416 67	1020 00	350 00	600 00	.....	.....	.....	847 36	.....	3234 03	.....
Central Fair	.....	743 50	.....	.....	5742 64	.....	.....	4469 75	.....	10955 89	.....
Hastings, North:	74 02	82 00	700 00	.....	.....	.....	.....	.....	2 00	858 02	.....
Dungannon and Faraday	9 69	45 00	60 00	.....	2 60	.....	.....	.....	1 50	118 79	18 10
Tudor and Limerick	0 14	62 00	84 00	.....	.....	.....	.....	.....	.....	146 14	.....
Rawdon	.....	91 00	109 00	.....	.....	.....	.....	.....	68 15	268 15	.....
Bangor and Monteagle	.....	67 00	91 00	.....	.....	.....	.....	.....	.....	158 00	.....
Hastings, East:	112 84	140 00	700 00	.....	267 45	.....	.....	.....	.....	1220 29	.....
Hungerford	18 33	61 00	140 00	.....	16 35	.....	.....	.....	.....	235 68	.....
Tyendinaga	38 95	75 00	140 00	.....	.....	.....	.....	.....	.....	253 95	.....

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

OCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Halton:	166 05	420 00	760 50	230 25	306 50	29 00	.....	.....	.....	86 01	326 12	2324 43	.....
Esquesing	.....	.....	244 50	89 00	73 50	46 00	.....	.....	.....	.....	139 52	592 52	188 93
Nassagaweya	1 55	.....	162 75	73 50	48 50	.....	0 50	.....	.....	.....	56 95	343 75	67 71
Nelson	37 47	.....	239 50	95 50	51 75	.....	.....	.....	.....	16 75	24 00	464 97	.....
Trafalgar	.....	.....	270 00	92 50	79 00	.....	.....	.....	.....	.....	111 23	552 73	95 24
Haldimand:	.....	420 00	439 05	61 50	72 00	.....	.....	.....	.....	13 35	131 26	1137 11	113 24
Cayuga, North	.....	.....	94 00	35 65	24 00	.....	.....	.....	.....	6 50	32 70	192 85	29 52
Dunn and Cayuga, South	.....	.....	102 85	44 50	17 75	.....	.....	.....	.....	.....	33 03	198 13	21 10
Rainham	.....	.....	270 05	19 70	45 25	.....	.....	.....	.....	18 00	51 76	404 76	82 09
Seneca and Oneida	197 68	.....	216 25	51 50	51 00	.....	.....	.....	.....	.....	58 99	575 42	.....
Walpole	.....	.....	252 50	57 75	99 00	.....	.....	.....	.....	3 00	87 20	499 45	102 09
Hamilton, E. D.:	.....	.....	.....	.....	.....	.....	.....	.....	2310 00	.....	68 00	2378 00	856 03
Central Fair	.....	.....	3619 50	1390 25	1600 75	50 00	.....	.....	.....	1341 28	1965 75	9367 53	1588 36*
Hastings, North:	.....	344 00	149 85	72 23	102 95	.....	69 91	.....	.....	17 25	99 10	855 29	2 73
Dungannon and Faraday	.....	.....	46 00	51 00	18 75	.....	.....	.....	.....	.....	21 14	136 89	.....
Tudor and Limerick	.....	.....	64 05	20 30	15 40	.....	.....	.....	.....	14 25	22 35	136 35	9 79
Rawdon	46 37	.....	88 80	36 60	29 40	21 75	.....	.....	.....	.....	39 70	262 67	5 48
Bangor and Monteagle	.....	.....	54 80	13 50	15 00	.....	.....	.....	.....	.....	16 25	99 55	58 45
Hastings, East:	.....	280 00	4172 70	61 20	61 20	.....	173 25	.....	.....	77 21	280 20	950 56	269 73
Hungerford	.....	.....	96 20	41 95	51 70	.....	.....	.....	.....	.....	23 50	213 35	22 43
Tyendinaga	.....	.....	83 70	32 90	43 05	.....	.....	.....	.....	26 66	35 00	220 31	33 64

* Divided among Hamilton, South Wentworth and North Wentworth Societies.

† $55.20 Prizes unpaid.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR, 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Hastings, West:	187 86	118 00	700 00		332 81					1338 67	
Belleville Horticultural	199 45	40 00	140 00		80 00					459 45	
Huron, East:	68 66	84 00	700 00	100 00				200 00		1152 66	
Grey	158 83	160 00	*95 75		408 20					822 78	
Howick	18 24	66 75	40 23		13 31				14 06	152 53	
Hullett		190 00	97 80	6 05	229 80				54 00	577 65	190 81
Morris	96 62	275 00	*164 04							535 66	
Turnbury	31 35	342 25	*143 81		231 16				150 60	899 27	
Wroxeter Horticultural		102 00	60 00		133 18				21 00	316 18	5 99
Huron, West:	74 87	94 00	700 00	100 00	239 70			646 82	84 00	1939 39	
Ashfield and Wawanosh	80 43	88 00	34 70	4 69	65 70					273 52	
Colborne		110 00	36 00	7 56						153 56	
Wawanosh, East	95 03	208 25	106 74	12 25	84 35	65 00				571 62	0 39
Goderich Horticultural	141 35	276 00	130 80	117 71						665 86	
Huron, South:	109 83	143 75	699 10	99 75	46 69		20 00	800 00		1919 12	
Hay	12 64	170 00	61 03	8 28	121 50					373 45	16 72
Stanley	19 40	188 50	78 52	11 23	63 15					360 80	
Stephen and Usborne	99 86	381 00	160 00		704 89		10 00			1355 75	
Tuckersmith		397 00	136 86	19 55	448 95					1002 36	34 72

* Municipal Grant included.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Hastings, West:		220 00	165 90	40 40	72 00		82 45			536 20	143 00	1260 00	78 67
Belleville Horticultural				178 20			3 00				16 12	197 32	262 13
Huron, East:		480 00	280 75	82 75	119 00		95 75				138 05	1196 30	43 64
Grey			301 50	91 70	92 75		22 25			23 30	129 63	660 13	161 65
Howick			69 55	29 30	19 30		1 60				23 00	142 15	10 38
Hullett			219 50	56 50	50 00		10 00			178 71	134 32	768 46	
Morris			239 75	46 25	81 50						61 25	428 75	106 91
Turnbury			206 00	34 00	151 50	56 50				151 97	163 41	813 38	85 89
Wroxeter Horticultural	19 68								200 00	70 99	31 50	322 17	
Huron, West:		479 10	514 00	382 50	51 00		35 50			61 45	325 33	1840 88	98 51
Ashfield and Wawanosh			83 00	45 75	41 50		7 75			8 25	35 91	222 16	51 36
Colborne									122 31		31 25	153 56	
Wawanosh, East			173 00	54 25	58 25					181 65	101 86	572 01	
Goderich Horticultural									524 51			524 51	141 35
Huron, South:		†475 90	754 50	140 75	224 75						174 04	1769 68	149 43
Hay			199 25	80 85	64 85					6 85	38 37	390 17	
Stanley			109 75	77 50	62 00		6 50			19 25	74 41	349 41	20 39
Stephen and Usborne			101 00						800 00	139 06	103 46	1143 52	212 23
Tuckersmith	73 36		353 00	113 75	119 00		53 00			144 52	180 45	1037 08	

* Including Municipal Grant.

† $59.49 County Grant.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
KENT, EAST:	127 73	235 00	700 00	250 00	435 95		72 00		2 40	1823 08	
Camden and Dresden		247 00	105 37		422 05				50 00	824 42	16 81
Harwich	173 11	249 85	119 86		242 50		499 03			1284 35	
Howard	109 31	480 00	128 06		944 15		*1900 00		82 00	3652 53	
Orford	33 75	138 00	66 70		301 25					539 70	24 44
KENT, WEST:	62 75	441 50	700 00	2100 00	1803 84		*100 00		147 00	5355 09	
Chatham and Dover		289 80	192 07	50 00	224 09				79 30	835 26	116 11
Raleigh	74 63	123 50	85 17			644 14	605 17		6 00	1538 61	
Romney	90 84	223 00	131 09	130 00	75 00					649 93	
Tilbury, East	5 80	108 00	87 67		16 83					218 40	
LAMBTON, EAST:	172 40	312 00	700 00	100 00	235 48					1519 88	
Bosanquet	27 23	221 00	110 78	40 00	107 75					506 76	
Brooke	35 11	161 50	79 59						25 00	301 20	
Euphemia and Dawn	19 88	114 00	68 72	30 00	41 25					273 85	
Plympton	27 18	226 00	123 41		141 51				25 15	543 25	
Warwick	23 10	138 50	76 52		50 75					288 87	
LAMBTON, WEST:	93 71	123 50	700 00	100 00	205 45			484 56		1707 22	
Enniskillen	9 61	242 00	140 00	200 00	84 30	450 00	†325 00			2450 91	
Moore	48 83	124 65	90 10	25 00	9 75				1 53	299 86	
LANARK, NORTH:	274 69	660 50	700 00	150 00	791 60	500 00	†150 00			3226 19	
Dalhousie	56 80	89 15	140 00		20 70		195 32			501 97	
Lanark	192 98	115 20	140 00		36 52		199 57			684 27	
Pakenham	8 44	181 00	140 00	25 00						354 44	

* Sale of Grounds.

† Sale of House.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
KENT, EAST:	.....	420 00	308 00	142 00	170 53	.....	339 54	.....	.....	48 50	164 50	1593 07	230 01
Camden and Dresden	53 16	.....	118 00	60 45	126 57	.....	.....	.....	.....	411 05	72 00	841 23	.....
Harwich	.....	.....	129 00	57 00	70 75	.....	.....	187 30	.....	204 91	79 64	1028 60	255 75
Howard	.....	.....	*444 00	118 00	196 85	.....	.....	.....	.....	2585 45	290 72	3635 02	17 50
Orford	.....	.....	139 95	67 90	22 05	.....	.....	.....	.....	277 90	56 34	564 14	.....
KENT, WEST:	.....	420 00	1002 50	183 50	298 55	.....	52 00	.....	.....	3000 01	393 53	5350 59	4 50
Chatham and Dover	64 24	.....	127 05	55 45	93 00	.....	.....	.....	.....	439 69	171 94	951 37	.....
Raleigh	.....	.....	104 00	37 95	26 50	.....	.....	760 17	.....	553 27	38 70	1520 59	18 02
Romney	.....	.....	.....	.....	.....	.....	.....	.....	.....	563 00	25 90	588 90	61 63
Tilbury, East	.....	.....	102 75	53 75	39 20	.....	4 00	64 50	.....	.....	12 50	276 20	57 80
LAMBTON, EAST:	.....	420 00	370 50	164 15	246 60	.....	7 25	.....	.....	55 00	201 46	1465 26	54 62
Bosanquet	.....	.....	150 55	56 05	45 65	.....	.....	.....	.....	105 80	44 72	402 77	103 99
Brooke	.....	.....	164 05	29 05	44 00	.....	1 75	.....	.....	13 17	11 75	296 77	4 83
Euphemia and Dawn	.....	.....	98 75	44 15	44 15	.....	.....	.....	.....	6 12	43 40	236 57	37 28
Plympton	.....	.....	202 65	58 80	52 30	.....	.....	.....	.....	96 00	123 42	533 17	10 08
Warwick	.....	.....	63 85	49 95	23 35	.....	.....	.....	.....	.....	37 25	174 40	114 47
LAMBTON, WEST:	.....	420 00	423 25	132 49	82 32	.....	12 50	.....	54 70	216 50	324 07	1665 74	41 48
Enniskillen	.....	.....	.....	.....	.....	.....	25 35	.....	382 00	1919 39	48 15	2374 89	76 02
Moore	.....	.....	116 87	41 60	16 35	.....	.....	.....	.....	1 20	80 93	256 95	42 91
LANARK, NORTH:	.....	420 00	†394 50	130 25	267 25	.....	3 00	.....	.....	1334 00	474 97	3023 97	202 82
Dalhousie	.....	.....	68 00	39 65	41 95	.....	.....	154 67	.....	21 15	13 65	369 07	132 90
Lanark	.....	.....	67 75	49 50	40 25	.....	.....	186 06	.....	6 60	95 59	445 75	238 52
Pakenham	.....	.....	82 50	74 20	45 50	.....	.....	.....	.....	.....	80 25	282 45	71 99

* $101.25 Prizes unpaid.

† $58.00 retained as per By-law.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lanark, South:		322 25	700 00		291 45					1313 70	145 35
Drummond	5 79	51 06	140 00				63 00		1 00	263 79	
Montague	6 46	157 50	140 00		49 70					353 66	3 2 14
Lennox:		273 50	700 00		390 32					1363 82	
Amherst Island	61 10	64 00	140 00						204 00	265 10	
Ernestown	37 12	61 00	140 00	10 00			122 50			373 62	
Leeds, South:		455 00	700 00	100 00	309 85				54 44	1619 29	629 30
Bastard and Crosby	11 73	10 00	80 00	11 00	53 15					165 88	
Crosby, North		289 12	99 50	14 00	128 13	100 00	12 00			642 75	212 46
Lansdowne	149 60	172 00	140 00	19 50	231 60		5 00		18 00	735 70	
Rear of Leeds and Lansdowne	1 55	136 26	96 00	38 15	70 75				3 00	345 71	
Leeds, North, and Grenville:	138 00	170 83	700 00	100 00	208 50				41 00	1358 32	
Elmsley South	49 25	86 00	82 58		132 45					350 28	
Kitley		94 00	160 00		115 55				23 25	392 80	
Oxford	7 60	78 20	77 80		20 90					184 50	41 20
Walford		129 81	125 00		57 05					311 86	
Lincoln:	17 08	740 50	700 00	570 00	906 91				42 25	2976 74	
Clinton	3 34	227 78	82 00	75 00	147 00	70 00				605 12	
Grantham	37 79	350 00	140 00	70 00						597 79	
Grimsby	2 16	464 00	140 00	150 00	679 40				10 57	1346 13	
Louth	45 28	131 50	45 50	75 00						297 28	

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Produce.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibition.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lanark, South:	159 76	280 00	340 75	132 25	124 50	....	....	....	....	234 09	187 70	1459 05	.....
Drummond	....	....	....	....	....	....	....	189 00	....	....	15 80	204 80	58 99
Montague	....	....	102 75	83 75	100 00	....	....	....	....	13 80	85 50	385 80	....
Lennox:	....	280 00	533 65	83 40	257 23	....	....	....	....	....	205 54	1359 82	4 00
Amherst Island	....	....	107 40	66 45	36 70	....	....	....	....	....	24 55	235 10	30 00
Ernestown	....	....	51 90	19 90	26 55	....	2 05	109 00	....	25 05	25 09	259 54	114 08
Leeds, South:	228 52	8473 50	500 75	142 90	266 75	....	3 00	....	....	439 16	194 01	2248 59	.....
Bastard and Crosby	....	....	47 79	44 24	26 99	....	....	....	....	9 00	33 00	161 02	4 86
Crosby, North	....	....	193 90	106 60	116 35	....	....	....	....	122 21	76 20	856 21	.....
Lansdowne	....	....	153 25	48 80	69 72	....	....	73 83	....	78 02	90 90	514 52	221 18
Rear of Leeds and Lansdowne	....	....	58 00	32 34	20 00	....	....	....	....	94 15	33 50	237 99	107 72
Leeds, North, and Grenville:	....	445 38	141 00	154 49	85 00	....	14 03	....	....	77 00	280 62	1197 52	160 80
Elmsley, South	....	....	74 00	29 62	51 26	....	5 75	....	....	45 98	28 42	235 03	115 25
Kitley	1 69	....	137 00	44 36	24 00	....	....	....	....	20 69	67 00	294 74	98 06
Oxford	....	....	68 25	26 10	38 85	....	51 20	....	....	4 45	36 55	225 70	....
Walford	....	....	68 50	56 25	27 94	....	....	....	....	26 00	40 72	225 11	86 75
Lincoln:	....	267 50	529 40	307 15	156 00	....	434 20	....	....	746 02	470 21	2910 78	65 96
Clinton	....	....	228 85	117 75	54 75	....	11 92	....	....	133 59	51 78	598 64	6 48
Grantham	....	....	....	....	....	....	....	....	597 79	....	....	597 79	....
Grimsby	....	....	365 25	157 25	152 55	....	2 50	....	....	412 73	200 24	1290 52	55 61
Louth	....	....	174 75	39 75	34 50	....	....	....	....	....	17 90	296 90	0 38

* 85% County Grant

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
London, E. D. :	1000 58	1350 00	350 00						40 19	2740 77	
Western Exhibition	5857 17	1014 00			12936 70			2000 00	216 79	22054 66	
Middlesex, East :	332 11	269 75	700 00						289 58	1591 44	
Dorchester, North	44 01	200 20	67 00	25 00	15 00					351 21	
London	28 12	330 30	140 00	20 00					4 00	522 42	
Nissouri, West	35 05	218 00	86 00							339 05	
Westminster	2 85	263 00			127 00					392 85	
Middlesex, West :	81 61	391 50	700 00		505 56					1679 67	
Caradoc	45 66	177 50	89 92		24 75					337 83	
Delaware	104 69	229 00	107 16						62 25	503 10	
Ekfrid	23 37	107 00	51 68							182 05	
Metcalfe	29 79	124 00	50 16							203 95	
Mosa	76 19	129 75	55 13		262 34					523 41	
Strathroy Horticultural	17 40	94 00	53 01		93 60				4 11	262 12	
Middlesex, North :		364 00	760 00		458 00			348 78	52 50	1923 28	191 28
Adelaide	19 29	66 00	49 87						11 57	137 73	
Biddulph	62 20	150 00	97 44							309 64	
Lobo		80 00	49 78							129 78	
McGillivray	0 04	80 14	45 42							125 60	
Williams, East		135 00	84 00							219 00	
Williams, West	88 43	242 50	102 04		126 00				5 00	563 97	

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
London, E. D.:									1100 00		165 80	1265 80	1474 97
Western Exhibition			4905 00	1578 50	2051 00	....	54 00			2777 16	4097 97	15463 63	6591 03
Middlesex, East:		420 00							1000 00		113 20	1533 20	58 24
Dorchester, North			143 75	48 70	19 50					92 32	35 67	339 94	11 27
London			325 00	50 80	25 25		1 00				52 25	454 30	68 12
Nissouri, West			167 75	27 05	12 05						51 40	258 25	80 80
Westminster			290 60	23 75	35 25						40 00	389 00	3 85
Middlesex, West:		406 55	499 30	77 45	129 40		41 05			181 85	215 84	1551 44	128 23
Caradoc			*221 80	52 95	39 20					6 00	58 50	263 45	74 58
Delaware			201 50	115 10	25 50		4 50				50 05	396 65	106 45
Ekfrid			78 50	35 25	36 00						23 91	173 66	8 39
Metcalfe			71 50	50 70	22 25		5 05				39 40	188 90	15 05
Mosa			97 50	34 00	51 50					158 75	36 85	378 60	144 21
Strathroy Horticultural				74 00						66 87	81 09	221 96	40 16
Middlesex, North:	239 17	420 00	549 75	204 25	175 00		53 50		215 00	37 00	220 89	2114 56	
Adelaide			77 50	15 50	3 00					5 75	19 50	121 05	16 68
Biddulph			111 50	39 25	15 00						17 93	183 68	125 96
Lobo									129 78			129 78	
McGillivray			71 25	19 25	18 25						14 75	123 50	2 06
Williams, East									219 00			219 00	
Williams, West			186 25	51 25	81 25		9 75			10 75	80 75	420 00	143 97

* 115 Prizes unpaid.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Monck	30 75	213 50	700 00	.....	308 00	.....	.....	.....	68 14	1320 39	.....
Canborough	5 70	60 25	57 30	25 00	7 32	.....	.....	.....	10 26	165 83	3 66
Caistor	12 37	72 00	52 52	45 00	9 00	.....	.....	.....	38 50	229 39	.....
Gainsborough	.....	67 00	63 98	70 00	12 30	.....	.....	.....	18 00	231 28	.....
Western Branch	47 59	255 75	140 00	45 00	98 10	.....	.....	.....	.....	586 44	.....
Pelham	23 14	122 00	105 00	12 00	53 67	.....	.....	.....	20 00	335 81	.....
Muskoka :	129 41	122 50	700 00	100 00	117 88	.....	.....	.....	22 30	1192 09	.....
Armour	.....	76 00	23 76	.....	9 30	.....	.....	.....	.....	109 06	.....
Chaffy	.....	123 50	54 54	.....	12 80	.....	.....	.....	.....	190 84	.....
Chapman	.....	51 00	24 84	.....	9 00	.....	.....	.....	.....	84 84	.....
Draper and Oakley	.....	97 50	46 98	.....	15 08	.....	.....	.....	.....	159 56	.....
Foley	14 29	36 00	19 44	.....	1 15	.....	.....	.....	.....	70 88	5 37
Humphrey and Cardwell	4 75	57 00	24 84	.....	.....	.....	.....	.....	.....	86 59	.....
Morrison and Ryde	27 46	96 00	13 90	49 14	.....	.....	.....	.....	1 75	188 25	.....
Stephenson	11 74	61 00	29 70	.....	11 00	.....	.....	.....	.....	113 44	.....
McKellar and Hagerman	7 60	63 20	30 78	.....	14 35	.....	.....	.....	.....	115 93	8 98
McLean and Ridout	2 10	39 00	16 74	.....	6 05	.....	.....	.....	.....	63 89	.....
Medora and Wood	42 83	63 00	27 00	.....	4 25	.....	.....	.....	2 00	139 08	.....
Watt	17 18	73 00	43 20	.....	0 70	.....	.....	.....	0 25	134 33	.....
Niagara, E. D. :	75 32	130 00	350 00	130 00	.....	.....	.....	.....	.....	685 32	.....
Norfolk, North :	349 98	287 50	700 00	.....	1153 15	.....	*75 00	542 71	17 50	3125 84	.....
Middleton	166 44	250 50	140 00	.....	140 80	.....	.....	.....	12 00	707 74	.....
Townsend	153 01	405 85	140 00	300 00	392 25	100 00	.....	.....	.....	1491 11	20 22
Windham	58 35	156 50	99 40	.....	70 94	.....	.....	.....	.....	385 19	.....

* Sale of Land for Street.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Monck :		418 85	319 20	151 64	77 50		18 49			158 00	133 82	1277 50	42 89
Canborough			89 25	40 95	16 35					.. ..	22 94	169 49	
Caistor			96 00	17 85	42 45						47 71	204 01	25 38
Gainsborough	1 11		101 35	41 74	14 56					10 00	30 52	199 28	32 00
Western Branch			230 50	45 75	119 25		2 75			15 00	88 47	501 72	84 72
Pelham			152 97	43 27	53 34		13 39		79 10		23 57	365 64	29 83
Muskoka :		418 50	195 00	110 00	69 75					21 02	119 84	930 11	261 98
Armour			28 50	22 75	8 50					15 00	16 54	91 29	17 77
Chaffy			55 25	32 00	14 00						24 19	125 69	65 15
Chapman			29 75	25 80	9 95					7 37	9 90	82 77	2 07
Draper and Oakley			46 00	26 25	17 75					12 90	38 99	141 89	17 57
Foley			35 00	25 50	6 25					1 30	8 20	76 25	
Humphrey and Cardwell			28 50	16 00	6 50					1 50	11 95	64 45	22 14
Morrison and Ryde			71 25	21 40	16 75						22 00	131 40	56 85
Stephenson			39 00	47 00	12 00						13 45	111 45	1 99
McKellar and Hagerman			41 25	36 00	22 60					5 61	20 05	124 91	
McLean and Ridout			20 45	11 40	7 57						14 00	53 42	10 47
Medora and Wood			29 25	30 75	7 75						29 13	96 88	42 20
Watt			66 20	28 20	6 30					1 50	14 90	116 60	17 73
Niagara, E. D. :			267 50	168 75	42 35					44 88	101 00	624 48	60 84
Norfolk, North :		379 40	746 05	235 90	196 50					958 80	151 46	2702 95	422 89
Middleton			214 10	86 30	79 96	14 00		25 00		7 05	97 37	553 78	153 96
Townsend			348 50	133 05	80 80					827 52	151 46	1511 33	
Windham			169 75	67 00	44 00					11 00	37 80	329 55	55 64

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Norfolk, South:	520 66	183 50	700 00	.....	.....	.....	.....	.....	17 00	1421 16	.....
Charlotteville	106 28	119 00	110 00	.....	105 75	.....	.....	.....	4 00	445 03	.....
Houghton	48 19	63 00	56 00	.....	.....	.....	.....	.....	.....	167 19	.....
Walsingham	82 92	176 00	140 00	100 00	155 31	.....	.....	.....	9 00	663 23	.....
Woodhouse	51 37	145 00	140 00	130 00	102 98	.....	.....	.....	.....	569 35	.....
Northumberland, East:	.....	99 00	700 00	.....	20 00	.....	.....	.....	3 50	822 50	.....
Brighton	56 59	53 00	.....	.....	.....	.....	.....	.....	.....	109 59	.....
Cramahe	.....	121 00	95 04	.....	27 00	.....	.....	.....	.....	243 04	.....
Murray	15 30	125 00	105 00	.....	162 30	.....	.....	.....	4 00	411 60	.....
Percy	29 15	133 50	115 28	50 00	223 30	.....	.....	.....	.....	551 23	2 06
Seymour	59 11	74 00	59 84	.....	28 75	.....	.....	.....	2 00	223 70	.....
Northumberland, West:	80 49	366 00	700 00	200 00	531 50	100 00	.....	392 73	42 00	2412 72	.....
Alnwick	91 51	54 00	101 18	.....	90 50	.....	.....	.....	.....	337 19	.....
Haldimand	112 93	58 00	110 73	.....	.....	.....	.....	.....	.....	281 66	.....
Hamilton	57 72	109 00	140 00	200 00	5 00	.....	.....	.....	.....	511 72	.....
Ontario, North:	121 18	380 50	700 00	.....	558 25	.....	.....	.....	5 00	1764 93	.....
Brock	.....	278 40	100 14	.....	156 97	.....	.....	.....	.....	475 51	.....
Mara and Rama	.....	108 50	64 68	.....	2 10	.....	.....	.....	3 30	178 58	.....
Reach and Scugog	4 65	88 00	39 48	.....	.....	.....	.....	.....	.....	132 13	.....
Scott	55 28	136 50	53 49	.....	44 10	.....	.....	.....	.....	289 37	.....
Thorah	81 63	164 00	94 92	100 00	72 15	.....	.....	.....	31 00	543 70	.....
Uxbridge	95 57	114 00	66 54	.....	143 86	.....	.....	.....	17 30	437 27	.....

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR, 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Norfolk, South:		446 00							362 71	200 00	130 51	1149 22	271 94
Charlotteville			196 10	61 00	27 25		0 50			7 50	54 90	347 25	97 78
Houghton			79 35	26 80	10 15					1 00	24 59	141 89	25 30
Walsingham			182 20	77 75	34 45		1 70			250 74	86 88	633 72	29 51
Woodhouse			124 05	41 20	31 60		4 15			260 00	40 60	501 60	67 75
Northumberland, East:	8 30	375 76	169 50	78 20	107 00		2 20				63 79	804 75	17 75
Brighton											14 00	14 00	95 59
Cramahe	5 22		68 50	14 85	54 25					10 65	95 15	238 62	4 42
Murray			103 85	50 23	58 62					147 12	36 50	396 32	15 28
Percy			160 40	39 75	67 59					218 75	66 80	553 25	
Seymour			*43 40	27 55	14 30		14 90			12 00	67 88	148 63	75 07
Northumberland, West:		351 91					6 75		796 58	1166 48	91 16	2412 87	0 15
Alnwick			106 57	32 27	47 25						63 15	249 24	87 95
Haldimand									160 73		5 55	166 28	115 58
Hamilton				40 00					432 00	1 00	21 75	494 25	16 97
Ontario, North:		420 00	†367 00	149 00	243 70		7 00			5 00	241 03	1398 48	366 45
Brock	19 72		164 50	78 25	114 65		3 50				74 91	455 53	19 98
Mara and Rama	6 15		89 50	35 50	10 75						32 60	174 50	4 08
Reach and Scugog			‡77 00		26 50		11 00				19 10	115 60	16 53
Scott			117 75	56 50	22 75						34 20	251 20	58 17
Thorah			129 00	47 50	63 75		30 22			161 09	67 51	499 07	44 63
Uxbridge			139 50	116 00	103 75						26 63	385 88	51 39

* $31.40 Prizes unpaid. † $34.25 Prizes unpaid. ‡ $18 Prizes unpaid.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Ontario, South	48 72	1006 00	700 00		1006 05				20 00	2840 77	
Pickering	47 77	130 25	140 00		209 46				43 40	570 88	
Whitby and Whitby East	4 40	275 00	140 00		77 70					497 10	
Oxford, North	67 72	670 75	700 00		841 99	4941 00		119 00		7340 41	
Blenheim	141 20	486 25	115 95		378 65					1122 05	
Blandford		115 00	54 21							169 21	
Nissouri, East	17 60	281 00	122 55	10 00	44 45				23 00	498 60	
Zorra, East	35 67	80 00	30 63	25 00						171 30	
Zorra, West	133 48	220 00	96 63	20 00	35 21					505 32	
Oxford, South	86 70	238 98	700 00					375 00	108 15	1508 83	
Dereham		318 00	89 53		173 14				7 00	587 67	
Norwich, North	151 89	489 00	107 68		440 42				44 56	1216 55	
Norwich, South	300 95	532 50	94 85		608 80				27 42	1564 52	
Oxford, East	120 60	75 00	22 39						19 82	237 81	
Oxford, North and West	25 83	353 00	206 33						27 36	612 52	
Peel	247 37	363 00	700 00	300 00	1517 35				12 90	3140 62	
Toronto	478 67	179 70	140 00		242 98				36 50	1077 85	
Perth, North	104 15	383 50	700 00	175 00	662 80		137 15	30 00		2192 60	
Elma	30 80	117 00	100 00	25 00	51 20					324 00	
Logan	12 09	96 00	78 00	20 00	18 25				2 50	226 84	
Mornington	64 20	105 00	86 00		10 26					265 46	
Wallace and Elma	104 34	258 25	147 75	100 00	650 55					1260 89	
Stratford Horticultural	492 35	103 00	98 00		86 30					779 65	

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Ontario, South:	....	280 00	865 00	481 50	192 75	.....	14 00	....	.....	157 83	319 36	2610 44	233 33
Pickering	....	....	217 00	97 00	122 09	.....	5 78	.....	.....	75 76	39 50	555 04	63 34
Whitby and Whitby East	.....	.....	226 00	119 00	29 00	.....	.....	.....	.....	.....	42 00	416 00	81 10
Oxford, North:	....	419 97	973 50	280 00	123 25	....	.....	.....	25 00	4969 89	404 16	7191 77	148 64
Blenheim	.....	.....	450 25	152 00	122 00	.....	36 00	.....	.....	81 55	143 97	985 47	136 58
Blandford	.....	.....	.....	.....	.....	.....	.....	.....	169 21	.....	.....	169 21	.....
Nissouri East	.....	....	274 75	42 75	81 50	.....	.....	.....	.....	.....	47 62	413 62	54 98
Zorra, East	.....	.....	.....	.....	.....	.....	.....	.....	135 00	.....	.....	135 00	36 30
Zorra, West	.....	.....	140 00	39 00	71 25	....	12 75	.....	.....	14 57	49 67	327 24	78 08
Oxford, South:	.....	420 00	608 50	108 25	143 75	....	56 75	.....	.....	.....	161 76	1499 01	9 82
Dereham	0 63	....	197 00	73 75	46 50	.....	.....	.....	.....	128 45	136 90	583 23	4 44
Norwich, North	.....	.....	318 25	91 75	110 75	.....	15 25	.....	.....	524 89	114 12	1175 01	41 54
Norwich, South	.....	.....	394 00	107 75	134 50	.....	.....	.....	.....	174 41	196 39	1007 08	557 44
Oxford, East	.....	.....	.....	.....	.....	.....	.....	.....	75 00	.....	16 50	91 50	146 31
Oxford, North and West	.....	.....	.....	.....	.....	.....	.....	.....	348 75	200 43	61 81	610 99	1 53
Peel:	.....	140 00	954 50	407 00	500 50	.....	50 00	.....	.....	212 46	448 27	2712 73	427 89
Toronto	.....	.....	352 50	108 75	116 00	.....	1 00	.....	.....	17 05	109 45	704 75	373 10
Perth, North:	.....	540 00	398 50	358 50	146 00	.....	33 50	.....	.....	298 60	375 29	2120 39	72 21
Elma	.....	.....	94 25	24 00	18 75	.....	50 75	.....	.....	3 00	95 11	285 86	38 14
Logan	.....	.....	101 25	41 50	39 00	.....	.....	.....	.....	2 50	35 96	220 21	6 63
Mornington	.....	.....	99 75	41 50	44 00	.....	.....	.....	.....	.....	24 61	209 86	55 60
Wallace and Elma	.....	.....	450 50	156 50	107 25	.....	28 00	.....	.....	291 00	197 44	1230 69	30 20
Stratford Horticultural	.....	.....	.....	101 50	7 00	.....	5 25	.....	30 00	13 50	51 70	208 95	570 70

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in Hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Perth South:	282 56	23 00	700 00	315 00	648 86	.....	.....	.....	57 00	2236 42	.....
Blanshard	50 92	211 00	115 15	49 70	180 15	.....	.....	.....	1 41	608 83	.....
Fullarton	18 17	94 25	52 18	.....	2 10	.....	.....	.....	.....	166 70	.....
Hibbert	.....	154 00	104 36	20 00	100 05	.....	.....	.....	21 00	399 41	.....
Easthope, South	22 20	96 00	48 70	12 00	93 62	.....	.....	135 00	30 00	437 52	.....
Mitchell Horticultural	.....	237 00	164 90	.....	90 00	.....	.....	.....	.....	491 90	.....
Peterborough, East:	20 14	82 50	700 00	.....	300 00	.....	.....	100 00	.....	1202 64	.....
Asphodel and Belmont	10 94	60 00	97 74	150 00	.....	.....	.....	.....	.....	318 68	.....
Douro and Dummer	39 30	70 00	92 45	.....	1 00	.....	57 35	.....	.....	260 10	.....
Burleigh	31 00	58 00	89 30	.....	10 00	.....	.....	.....	.....	188 30	.....
Otonabee	46 50	58 00	55 47	90 00	105 98	.....	.....	.....	.....	355 95	.....
Galway	26 83	79 00	93 97	.....	7 95	.....	.....	.....	.....	207 55	.....
Peterborough, West:	18 22	92 00	700 00	.....	258 75	.....	.....	.....	1 25	1070 22	.....
Monaghan, South	9 92	70 00	140 00	.....	39 65	.....	.....	.....	.....	259 57	.....
Smith and Ennismore	102 33	95 00	140 00	.....	107 00	.....	.....	.....	4 44	448 77	.....
Peterborough Horticultural	206 82	62 75	140 00	.....	10 30	.....	.....	.....	5 66	425 53	.....
Prescott:	3 69	82 00	700 00	.....	206 00	.....	.....	.....	20 00	1011 69	.....
Caledonia	.....	124 00	120 00	.....	.....	.....	.....	.....	.....	244 00	.....
Longueuil and Hawkesbury	.....	156 00	208 00	.....	.....	.....	.....	.....	.....	364 00	.....
Plantagenet, South	15 22	94 00	92 00	.....	.....	.....	.....	.....	.....	201 52	.....

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Perth, South:		509 99	409 15	120 30	184 50		61 96			260 23	253 44	1799 57	436 85
Blanshard			93 00	34 75	76 75		66 25			157 64	81 61	510 00	98 33
Fullarton			68 25	23 50	11 86		23 50				34 25	161 36	5 34
Hibbert	26 27		166 50	35 40	53 00					156 90	59 32	497 39	97 98
Easthope, South			190 75	64 50	65 50					17 75	64 00	402 50	35 02
Mitchell Horticultural	15 81		19 50	96 50	57 00					131 20	102 78	422 79	69 11
Peterborough, East:		420 00	*260 50	106 00	87 95		47 00			1 50	130 88	1045 43	157 21
Asphodel and Belmont							14 40		100 00	183 87	12 25	310 52	8 16
Douro and Dummer						30 00		72 50		1 00	18 55	122 05	138 05
Burleigh			72 50	52 20	20 90						28 90	174 50	13 80
Otonabee			†102 50	35 25	18 75		8 50			129 00	40 65	308 70	47 25
Galway			56 50	39 00	22 00						35 50	153 00	54 55
Peterborough, West:		420 00	260 75	60 25	57 25		38 00		29 70		118 17	984 12	86 10
Monaghan, South			94 75	35 75	40 50						32 00	203 00	56 57
Smith and Ennismore			154 00	75 00	93 25					10 00	69 96	402 21	46 56
Peterborough Horticultural				154 00						20 00	44 30	218 30	207 23
Prescott:		420 00	217 75	76 50	89 50					8 00	105 00	916 75	94 94
Caledonia			‡232 00								12 00	244 00	
Longueuil and Hawkesbury				270 50							47 00	360 50	3 50
Plantagenet, North			86 00	55 30	16 00						35 20	192 50	9 02

* $8.40 Prizes unpaid. † $25.95 Prizes unpaid. ‡ Not classified.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Prince Edward:	100 38	155 00	700 00	.....	453 53	.....	.....	.....	.....	1408 91	.....
Ameliasburgh	15 62	155 00	140 00	.....	278 50	.....	.....	.....	36 00	625 12	.....
Hallowell	12 52	66 00	65 23	.....	34 32	.....	.....	.....	.....	177 97	.....
Hillier	26 50	70 00	65 00	.....	7 50	.....	.....	.....	.....	169 00	.....
Marysburgh, South	1 31	91 00	91 30	.....	36 00	.....	.....	.....	.....	219 61	.....
Sophiasburgh	2 47	58 00	58 21	.....	20 42	.....	.....	.....	.....	139 10	.....
Renfrew, North:	165 71	147 00	700 00	.....	265 00	.....	.....	.....	.....	1277 71	.....
Grattan and Wilberforce	39 05	112 85	115 00	.....	.....	.....	.....	.....	.....	266 90	24 80
Pembroke and Stafford	.....	151 75	140 00	.....	168 50	.....	.....	.....	207 75	668 00	50 27
Ross	6 20	107 00	140 00	.....	9 05	.....	.....	.....	.....	262 25	.....
Renfrew, South:	4 17	144 75	700 00	.....	336 32	.....	.....	.....	50 93	1236 17	.....
Admaston	32 29	66 29	77 00	.....	.....	.....	.....	.....	.....	175 58	.....
Brudenell and Lyndoch	129 00	53 25	62 00	.....	.....	.....	.....	.....	.....	244 25	0 14
McNab	.....	84 00	96 00	.....	.....	.....	.....	.....	2 70	182 70	10 19
Arnprior	53 58	199 50	140 00	100 00	106 70	.....	*1 10	.....	.....	600 88	.....
Russell:	31 32	333 00	700 00	.....	30 00	.....	.....	.....	.....	1094 32	.....
Clarence	7 01	40 00	66 00	.....	.....	.....	.....	.....	.....	113 01	.....
Gloucester	.....	57 00	35 00	.....	63 60	.....	.....	.....	31 47	187 07	0 10
Osgoode	71 45	240 00	155 00	.....	.....	.....	30 00	.....	.....	496 45	.....
Russell	.....	216 00	142 00	.....	12 00	.....	.....	.....	.....	370 00	.....

* Sale of hay.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	c.	$ c.	$ c.	$ c.	$ c.
PRINCE EDWARD:		420 00	297 20	87 70	82 95		6 75			298 33	101 46	1294 39	114 52
Ameliasburgh			209 50	71 40	38 45					22 28	148 72	490 35	134 77
Hallowell			64 85	27 30	14 00						47 65	153 80	24 17
Hillier			56 65	28 50	22 90					5 95	19 50	133 50	35 50
Marysburgh, South			75 50	31 75	67 85						39 51	214 61	5 00
Sophiasburgh			80 50	23 25	19 10					5 50	9 14	137 49	1 61
RENFREW, NORTH:		350 00	261 50	53 75	76 80					101 24	138 58	981 87	295 84
Grattan and Wilberforce			34 00	18 50	19 20			187 00			33 00	291 70	
Pembroke and Stafford	50 27		152 75	58 00	87 00					230 35	139 90	718 27	
Ross			*88 50	38 80	41 25		2 00				48 75	215 85	46 40
RENFREW, SOUTH:		420 00	†167 00	74 25	94 00					387 70	115 97	1231 67	4 50
Admaston			‡53 06	23 00	29 71						63 29	143 33	32 25
Bruderell and Lynedoch			12 06	3 67	5 30			200 00			23 36	244 39	
McNab	0 77		55 10	60 35	37 15		0 60			3 87	57 50	192 89	
Arnprior			117 30	79 20	81 50		13 00			200 00	77 72	568 72	32 16
RUSSELL:		398 00	295 85	115 75	86 40					46 65	127 75	1070 40	23 92
Clarence			40 37	12 84	7 40						17 25	77 86	35 15
Gloucester	0 49		111 75	30 63	2 00						42 30	187 17	
Osgoode								496 35				496 35	0 10
Russell			171 00	121 00	22 00						56 00	370 00	

* $3.45, Prizes unpaid.

† $27.25, Prizes unpaid.

‡ $25.73, Prizes unpaid.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Simcoe, East:		498 00	700 00	150 00	564 85	305 22			61 03	2279 10	
Medonte	50 42	62 00	140 00							252 42	
Oro		298 93	140 00		22 45				2 75	464 13	103 88
Tiny and Tay	23 55	192 00	140 00	60 00	65 50					481 05	
Simcoe, West:	222 85	299 00	700 00		216 75				47 25	1485 85	
Collingwood		229 00	130 00	65 00	124 50				34 00	582 50	
Flos		132 00	87 66						19 00	238 66	
Nottawasaga	91 00	341 50	104 20	140 00	236 00				25 50	938 20	43 73
Vespra	87 65	114 00	98 20		7 09					306 94	
Simcoe, South:	18 92	700 00	700 00		519 90					1938 82	
Gwillimbury, West		382 50	140 00		287 00					809 50	
Innisfil		38 00								38 00	
Tossorontio		161 00	138 00		162 95					461 95	
Stormont:	125 12	234 00	700 00		230 80					1289 92	
Finch		120 00	115 00		5 50					240 50	
Osnabruck		138 00	140 00						33 60	311 60	
Roxborough	43 19	88 00	126 25							257 44	
Toronto, E. D.	825 72	209 00	550 00		302 15					1886 87	

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Simcoe, East:		420 00	534 00	193 50	89 00					732 12	227 15	2195 77	83 33
Medonte			86 00	26 75	10 50		43 00			4 00	17 17	187 42	65 00
Oro	66 13		228 00	122 75	80 75						70 38	568 01	
Tiny and Tay			158 50	89 00	60 00	18 00	2 00			18 00	88 25	433 75	47 30
Simcoe, West:		420 00	413 00	192 50	93 00		8 00			107 57	160 15	1394 22	91 63
Collingwood				108 60						114 89	132 50	355 99	226 51
Flos				88 25	24 75	18 25	21 00			8 00	21 65	181 90	56 76
Nottawasaga	71 20		339 50	167 75	147 50		5 00				250 98	981 93	
Vespra			114 00	42 25	25 00	25 00		14 00		2 00	32 00	254 25	52 69
Simcoe, South:		420 00	498 00	270 00	345 00		70 00			60 00	157 09	1820 09	118 73
Gwillimbury, West	51 91		296 00	103 50	167 45		4 00			77 65	47 55	748 06	61 44
Innisfil	27 92						8 00					35 92	2 08
Tossorontio	55 66		171 50	88 25	86 75					25 00	55 12	482 28	20 33
Stormont:		414 85	*277 50	103 50	150 75		11 50			42 68	172 82	1168 10	121 82
Finch			83 75	36 50	38 75		2 25			3 50	30 37	195 12	45 38
Osnabruck	6 74		132 50	83 75	39 00						32 31	294 30	17 30
Roxborough			104 00	64 50	53 25					17 59	6 00	245 34	12 10
Toronto, E. D.:				468 75					†246 10	119 72	373 37	1207 94	678 93

* $5.50, Prizes unpaid.

† Paid to Horticultural Society half gate receipts, $151.10; and $95.00 to Industrial Exhibition.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Victoria, North:	.....	145 50	700 00	200 00	*529 00	.....	.....	73 50	1 00	1649 00	.....
Bexley and Carden	.....	51 00	37 50	.....	.....	.....	.....	.....	.....	88 50	.....
Eldon	.....	132 00	97 00	.....	74 50	.....	.....	.....	24 50	328 00	.....
Fenelon	42 00	94 25	.....	.....	26 39	.....	.....	.....	.....	162 64	.....
Laxton and Digby	57 14	130 00	97 75	.....	4 50	.....	.....	.....	.....	289 39	.....
Somerville	97 31	167 00	124 75	.....	.....	.....	.....	.....	.....	389 06	.....
Victoria, South:	484 45	148 00	700 00	200 00	440 25	.....	.....	.....	.....	1972 70	.....
Emily	40 37	116 00	116 65	.....	20 21	.....	.....	.....	.....	293 23	.....
Mariposa	22 42	247 00	140 00	.....	159 20	.....	.....	.....	.....	568 62	.....
Ops	42 68	101 00	102 50	.....	.....	.....	145 50	.....	.....	391 68	.....
Verulam	64 22	70 00	60 85	.....	35 20	.....	95 09	.....	.....	325 36	.....
Waterloo, North:	19 00	337 00	700 00	300 00	427 00	.....	.....	.....	.....	1783 00	.....
Wellesley	149 39	346 50	140 00	.....	66 75	.....	.....	.....	12 40	715 04	.....
Woolwich	.....	149 00	140 00	20 00	.....	.....	.....	.....	105 50	414 50	16 44
Berlin Horticultural	.....	78 00	108 54	15 00	27 00	.....	.....	.....	.....	228 54	.....
Waterloo, South:	350 05	364 50	700 00	235 00	694 46	.....	.....	.....	.....	2344 01	.....
Wilmot	303 99	213 00	140 00	75 00	295 35	.....	.....	.....	210 00	1237 34	.....
Preston Horticultural	290 46	75 00	140 00	.....	93 90	.....	.....	.....	11 95	611 31	.....
Welland:	160 80	272 00	700 00	74 47	512 05	.....	.....	.....	.....	1699 32	.....
Humberstone	0 57	102 00	110 40	20 00	.....	.....	.....	.....	3 25	236 22	.....
Stamford	9 01	123 00	140 00	40 00	.....	.....	.....	.....	.....	312 01	.....
Thorold	32 34	133 45	140 00	25 00	20 85	.....	.....	.....	.....	351 64	.....

* $402.00, Interest and Insurance; and $56.00, Sale of grounds.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurer.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Victoria, North:	1 38	357 00	223 75	136 75	47 50	.....	19 50	.....	20 28	606 17	172 52	1584 85	64 15
Bexley and Carden	.....	.....	.....	.....	.....	.....	.....	.....	73 00	.....	15 00	88 50	.....
Eldon	27 90	.....	104 50	36 20	46 00	.....	1 00	.....	.....	33 00	76 64	319 24	8 76
Fenelon	.....	.....	71 75	31 95	21 95	.....	3 70	.....	.....	7 78	19 50	156 63	6 01
Laxton and Digby	.....	.....	73 00	34 90	39 00	.....	3 70	.....	.....	4 25	30 02	184 87	104 52
Somerville	.....	.....	*81 05	58 10	37 90	.....	.....	.....	.....	.....	25 40	183 55	205 51
Victoria, South:	.....	420 00	351 75	95 75	49 75	.....	18 00	.....	.....	398 43	216 94	1550 60	422 10
Emily	.....	.....	103 60	56 00	57 75	.....	.....	.....	.....	5 84	46 95	269 54	23 69
Mariposa	.....	.....	242 50	84 40	65 65	.....	.....	.....	.....	.....	125 02	517 57	51 05
Ops	.....	.....	.....	.....	.....	.....	.....	217 52	.....	.....	17 55	235 07	156 61
Verulam	.....	.....	79 50	42 75	23 75	.....	3 00	95 09	.....	2 60	19 37	266 06	59 30
Waterloo, North:	.....	388 54	576 50	230 75	153 00	.....	.....	.....	.....	.....	294 22	1643 01	139 99
Wellesley	.....	.....	253 00	89 25	106 75	.....	0 50	.....	.....	17 59	132 03	599 12	115 92
Woolwich	49 55	.....	210 25	79 25	48 45	.....	.....	.....	.....	.....	43 44	430 94	.....
Berlin Horticultural	19 05	.....	.....	131 50	20 00	.....	.....	.....	.....	5 00	50 65	226 20	2 34
Waterloo, South:	.....	280 00	710 00	215 20	130 50	.....	.....	.....	.....	209 59	287 84	1833 13	510 88
Wilmot	.....	.....	357 75	105 25	126 25	.....	.....	.....	.....	59 27	144 19	792 71	444 63
Preston Horticultural	.....	.....	.....	203 50	.....	.....	.....	.....	.....	40 62	95 25	339 37	271 94
Welland:	.....	390 39	587 00	138 96	153 99	.....	.....	.....	.....	59 28	202 44	1532 06	167 26
Humberstone	.....	.....	95 33	28 69	34 26	.....	.....	.....	.....	.....	38 73	197 01	39 21
Stamford	.....	.....	148 00	41 95	10 60	.....	.....	.....	.....	.....	25 00	225 55	86 46
Thorold	.....	.....	196 72	38 70	32 47	.....	.....	.....	.....	.....	52 88	320 77	30 87

* $8.90, Prizes unpaid.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on Loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Wellington Centre:	141 16	253 00	700 00		132 30			144 75		1371 21	
Erin	87 57	275 00	132 82		501 25				108 50	1105 14	
Garafraxa West	75 44	169 00	49 75		31 85				4 00	330 04	
Luther		121 50	55 72	10 00	10 65				55 00	252 87	
Nichol	11 65	102 00			49 75					163 40	
Pilkington	66 04	162 00	62 19	40 00	96 22				14 00	440 45	
Elora Horticultural	10 75	74 00	36 82		22 00					143 57	
Fergus Horticultural	53 00	67 00	32 84		62 60					215 44	
Wellington, South:	128 51	1024 25	700 00	100 00	866 41	600 00		20 00	58 15	3497 32	
Eramosa	74 30	319 50	140 00		155 30				25 00	714 10	
Puslinch	149 66	359 00	140 00						16 05	664 71	
Wellington, West:	31 04	212 00	700 00	24 43	167 60				18 50	1153 57	
Arthur	76 41	228 50	87 00		33 36					425 27	
Minto		299 00	66 00		331 00					696 00	
Peel and Marylburgh		118 50	52 40		10 90				3 55	185 35	
Mount Forest Horticultural		196 25	78 19	100 00	247 04				10 50	631 98	
Palmerston Horticultural	83 71	225 00	45 76	25 00	78 10					457 57	
Clifford Horticultural	17 88	136 50	64 40		42 30				2 00	263 08	
Wentworth, North:	265 42	157 00	700 00	300 00				349 00	7 06	1778 48	
Beverley	177 54	751 02	140 00	40 00	115 50					1224 06	
Flamboro', East		230 00	100 00	50 00	40 00			10 00		430 00	
Flamboro', West	95 38	288 00	140 00	30 00	66 00				1 50	620 88	

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Continued.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibition.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Wellington Centre		419 89	337 25	172 50	136 50		21 00				167 22	1254 36	116 85
Erin			330 25	139 60	210 10	5 00				21 00	205 21	911 16	193 98
Garafraxa, West			75 00	50 00	46 00					2 25	89 00	262 25	67 79
Luther			103 50	76 00	26 50						39 17	245 17	7 70
Nichol									144 75		10 00	154 75	8 65
Pilkington			140 00	92 75	78 50		12 50			12 50	56 95	393 20	47 25
Elora Horticultural				92 50							33 60	126 16	17 47
Fergus Horticultural				143 50							49 16	192 66	22 78
Wellington, South		280 00	*593 25	281 00	192 00		2 00			1600 00†	360 44	3298 19	199 13
Eramosa			227 75	104 55	66 50		1 00			5 05	133 18	538 03	176 07
Puslinch			212 00	115 00	35 00						105 69	467 69	197 02
Wellington, West		420 00	‡205 50	80 00	66 75		25 00		55 72	46 15	223 85	1068 97	84 60
Arthur			115 25	67 50	58 45					12 82	48 30	302 32	122 95
Minto	3 46		225 00	98 00	93 50					95 96	102 59	618 51	77 49
Peel and Maryburgh			67 00	25 75	12 50					4 73	40 54	150 52	34 83
Mount Forest Horticultural	71 91		156 00	119 00	40 50					161 35	97 10	645 86	13 88
Palmerston Horticultural			148 50	68 75	53 75		26 75			33 05	100 90	431 70	25 87
Clifford Horticultural			89 00	49 00	28 50		1 00			2 65	59 09	229 24	33 84
Wentworth, North		380 00							970 00		45 80	1395 80	382 62
Beverley			370 12	271 75	142 95		11 10			9 00	162 05	966 97	257 09
Flamboro', East			167 50	96 50	46 50					7 50	41 62	359 92	70 38
Flamboro', West			206 25	99 75	48 00					42 00	86 25	482 25	138 63

* $10.50, Prizes unpaid.

† Retired notes.

‡ $54.00, Prizes unpaid.

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Concluded.*

RECEIPTS FOR THE YEAR 1882.

SOCIETIES.	Balances in hand.	Subscriptions and Donations.	Legislative Grants.	Municipal Grants.	Rents of and Admissions to Grounds.	Moneys on loan.	Sale of Machinery, Stock, Seeds, etc.	From other Societies for Amalgamation.	Miscellaneous Receipts.	Totals of Receipts.	Balances due Treasurer.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
WENTWORTH, SOUTH:	184 76	225 00	700 00	300 00	.....	.....	.....	392 00	.....	1801 76	.....
Ancaster	9 23	259 25	124 00	50 00	28 00	.....	.....	.....	.....	470 48	.....
Barton and Glanford	78 99	151 25	124 00	60 00	.....	.....	.....	.....	1 00	415 24	.....
Saltfleet and Binbrook	62 77	298 00	140 00	75 00	20 60	.....	.....	.....	2 51	598 88	.....
YORK, NORTH:	230 84	662 75	700 00	150 00	563 88	.....	.....	241 32	.....	2548 79	.....
Gwillimbury, East	74 07	237 25	106 55	22 83	.....	.....	.....	.....	.....	440 70	.....
Gwillimbury, North, and Georgina	101 62	183 00	125 10	26 79	253 65	.....	.....	.....	97 50	787 66	.....
King	112 52	144 00	98 35	21 06	394 65	.....	.....	.....	150 00	920 58	.....
Whitchurch	.....	223 10	90 00	19 32	132 00	.....	.....	40 00	.....	504 42	.....
YORK, WEST:	403 37	322 75	700 00	125 00	957 40	.....	.....	82 87	.....	2591 39	.....
Etobicoke	55 51	338 00	165 00	80 00	118 40	.....	.....	.....	.....	848 91	.....
Vaughan	188 89	98 00	140 00	25 00	9 25	.....	.....	.....	.....	461 14	.....
YORK, EAST:	523 78	1150 30	700 00	125 00	1713 15	.....	.....	241 00	59 25	4512 48	.....
Markham	49 05	76 00	140 00	25 00	.....	.....	.....	141 92	.....	431 97	.....
Scarborough	323 59	196 00	140 00	25 00	174 55	.....	.....	.....	218 00	1077 67	.....

ANALYSIS of Reports of County and Township Agricultural Societies, and of Horticultural Societies.—*Concluded.*

EXPENDITURES FOR THE YEAR 1882.

SOCIETIES.	Balances due Treasurers.	Legislative Grants to Township Societies.	Prizes for Animals.	Prizes for Field, Garden and Dairy Products.	Prizes for Manufactures, Fine Arts and Ladies' Work.	Prizes for Ploughing.	Prizes for Previous Years Paid.	Purchase of Machinery, Stock, Seeds, etc.	Grants to Union Exhibitions.	Buildings and Grounds, Interest and Insurance.	Working and Miscellaneous Expenses.	Totals of Expenditure.	Balances in hand.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
WENTWORTH, SOUTH:		388 00							1008 25		66 51	1462 76	339 00
Ancaster			165 75	109 25	38 50						79 45	392 95	77 53
Barton and Glanford			185 50	85 75	34 50						64 00	369 75	45 49
Saltfleet and Binbrook			153 00	53 00	142 25						87 24	435 39	163 39
YORK, NORTH:		510 00	655 75	300 75	165 85		3 50		40 00	328 87	284 72	2406 44	142 35
Gwillimbury, East			190 50	50 75	51 50						93 25	386 00	54 70
Gwillimbury, North, and Georgina			290 00	71 50	61 00		75 50			106 80	78 21	683 01	104 65
King			334 00	140 00	161 10					26 15	133 41	794 66	125 92
Whitchurch							3 00		241 32		33 50	277 82	226 60
YORK, WEST:		280 00	687 50	254 50	316 00		48 00		54 50		380 24	2020 74	570 65
Etobicoke			325 00	259 00	40 00		5 00			53 24	117 91	800 15	48 91
Vaughan							29 00		86 87	22 50	112 00	250 37	210 77
YORK EAST:		*330 00	1373 40	539 40	513 00				129 46	229 22	348 97	3463 45	1049 03
Markham									236 85		25 50	362 35	69 62
Scarborough			281 50	157 50	75 00					44 87	124 19	683 06	394 61

* $50.00 County Grant.

AMOUNTS PAID TO AGRICULTURAL SOCIETIES IN ONTARIO IN 1883.

Agricultural Societies.	Grants.	Agricultural Societies.	Grants.
	$ c.	*Brought forward*	$ c. 30,799 00
Algoma	700 00	Middlesex, West	700 00
Addington	700 00	Middlesex, North	700 00
Brockville, E. D.	700 00	Muskoka	700 00
Bruce, North	700 00	Monck	700 00
Bruce, South	700 00	Minden and Snowden	150 00
Bruce Mines	200 00	Niagara	350 00
Brant, North	700 00	Norfolk, North	700 00
Brant, South	700 00	Norfolk, South	700 00
Carleton	700 00	Northumberland, West	700 00
Cornwall, E. D.	350 00	Northumberland, East	700 00
Cardwell	700 00	Oxford, North	700 00
Dundas	700 00	Oxford, South	700 00
Durham, East	700 00	Ontario, North	700 00
Durham, West	700 00	Ontario, South	700 00
Dufferin	700 00	Prescott	700 00
Elgin, East	700 00	Peterboro', West	700 00
Elgin, West	700 00	Peterboro', East	700 00
Essex, North	700 00	Perth, North	700 00
Essex, South	700 00	Perth, South	700 00
Frontenac	700 00	Parry Sound	700 00
Grey, East	700 00	Prince Edward	700 00
Grey, North	700 00	Peel	700 00
Grey, South	700 00	Russell	700 00
Grenville	700 00	Ross and Bromley	300 00
Glengarry	700 00	Renfrew, North	700 00
Haldimand	700 00	Renfrew, South	700 00
Halton	700 00	Six Nation Indians	50 00
Huron, East	700 00	Simcoe, East	700 00
Huron, West	700 00	Simcoe, West	700 00
Huron, South	700 00	Simcoe, South	700 00
Hastings, East	700 00	Stormont	700 00
Hastings, West	700 00	Toronto, E. D.	550 00
Hastings, North	700 00	Victoria, North	700 00
Hamilton, E. D.	350 00	Victoria, South	700 00
Haliburton, Dysart, etc.	150 00	Wollaston	140 00
Kent, East	700 00	Waterloo, North	700 00
Kent, West	700 00	Waterloo, South	700 00
Lambton, East	700 00	Wentworth, South	700 00
Lambton, West	700 00	Wentworth, North	700 00
London, E. D.	350 00	Welland	700 00
Leeds, North, and Grenville	700 00	Wellington, Centre	700 00
Leeds, South	700 00	Wellington, West	700 00
Lanark, South	700 00	Wellington, South	700 00
Lanark, North	700 00	York, East	700 00
Lennox	699 00	York, West	700 00
Lincoln	700 00	York, North	700 00
Middlesex, East	700 00		
Carried forward	30,799 00	Total	60,339 00

PAYMENTS FOR THE ENCOURAGEMENT OF AGRICULTURE IN 1883.

SERVICE.	Appropriation.	Expended in 1883.	Unexpended or Over-expended.
Agricultural Societies	61,350 00	60,339 00	*1,011 00
Agricultural and Arts Association	10,000 00	10,000 00	
Eastern Dairymen's "	1,500 00	1,500 00	
Western Dairymen's "	1,500 00	1,500 00	
Ontario Fruit Growers' "	1,800 00	1,800 00	
" Entomological Society	1,000 00	1,000 00	
" Poultry Association	700 00	700 00	
Paper, Printing and Binding Reports	2,000 00	7,928 29	
Sundries		3,414 91	†9,343 20

* Unexpended. † Over expended.

ANNUAL REPORT

OF THE

POULTRY ASSOCIATION OF ONTARIO.

FOR THE YEAR 1883.

To the Honourable the Commissioner of Agriculture, Toronto:

Sir,—I have the honour herewith to send you the Report of the Poultry Association for 1883, the list of Directors of same, and the Treasurer's affidavit of members subscriptions.

Your obedient servant,

W. Sanderson, *Secretary P. A. O.*

Brantford, *March 15th, 1883.*

LIST OF OFFICERS.

President,—W. H. Doel, Doncaster.

First Vice-President,—A. Bogue, London.

Second Vice-President,—E. Kester, Brantford.

Directors:—J. B. Wills, Toronto; Jos. Dilworth, Toronto; W. Barber, Toronto; John McClelland, Peterborough; Rd. MacKay, Hamilton; James Anderson, Guelph; J. W. Buck, Brantford; I. O. Weldon, London; S. Butterfield, Sandwich.

Secretary,—Joseph Dilworth, Toronto.

Treasurer,—John James, Toronto.

Auditors,—J. E. Mitchell, and H. J. Hill.

Wm. H. Doel, *President.*

W. Sanderson, *Secretary.*

March 15th, 1883.

REPORT OF THE DIRECTORS FOR THE YEAR 1883.

The annual exhibition of this Association was held in Toronto from the 7th to 14th February, 1883, at 83 Yonge street. The number of entries was larger than usual, and were as follows :—

Asiatics	163
Games	163
Hamburgs	79
Leghorns	56
Spanish	17
Dorkings	34
Plymouth Rocks	54
Polands	50
Houdans	10
Game Bantams	56
Other varieties Bantams	33
" " Fowls	7
Turkeys	17
Ducks	36
Geese	23
Rabbits	4
Pigeons	224
Pheasants	7
Specials	136
Breeding Pens	28
Sundries	3
Total	1,200

The birds exhibited came from all parts of Ontario ; also from Montreal and Michigan. Many persons proposed to exhibit who were prevented by the snow blockade on the railways in the northern part of this Province, not being able to get from home, all trains being cancelled.

The quality of the exhibits was probably as fine as could be got together in America, every class containing only the finest of its kind, there being less inferior stock than could be expected from the large number of entries.

The *Asiatics* were unusually fine, especially *Light Brahmas*. The *Games* were in greater number, and of higher general excellence than ever before. *Hamburgs*, extra good. *Leghorns*, far finer and better than for several years. *Spanish*, few in number, but of very great merit. *Dorkings*, extra, but many of the birds had suffered from the very severe weather. *Plymouth Rocks* were in large numbers, and contained many very fine birds. *Polish* and *Houdans*, very good and fine. *Bantams* were extra, especially the *Games*. Other variety of fowls contained a fine pair of *Sultans*.

Turkeys, of unusual size and weight in the *Bronze* class.

Ducks were short in number, but of unusual merit.

Geese—of these same may be said as of the Ducks—very fine, but no great number.

Pigeons, in large number and of very great merit, many splendid birds being on exhibition.

In *Pheasants* the display wae larger and finer than ever seen at our exhibitions.

Breeding pens were very fine, and many fine lots of various breeds were amongst them. An artificial mother was on show, containing many great merits, and affording ample protection and warmth to the young broods.

All of which is respectfully submitted,

WM. H. DOEL, *President.*
W. SANDERSON, *Secretary.*

TORONTO, *March 15th*, 1883.

POULTRY ASSOCIATION OF ONTARIO.

Financial Statement for Year 1883.

John James, Treasurer, in account with the Poultry Association of Ontario.

Dr.	$. c.	$. c.
To Subscriptions for Special Prizes	137 75	
" Government Grant	700 00	
" Entry Fees	559 44	
" Memberships	103 00	
" Door Receipts	276 70	
" Loan	300 00	
		2,076 89
Cr.		
By Balance paid late Treasurer	9 69	
" Entries overpaid	10 84	
" *Expenses General	466 49	
" " Judges	75 00	
" " Secretary	95 00	
" Rent and Gas	155 00	
" Printing and Advertising	123 10	
" Prizes, General List	1,000 00	
" " Special	114 00	
" Balance on hand	27 77	
		2,076 89

* The item for General Expenses consists of caretakers, electric light, stationery, and extra expenses on coops, etc.

The above statement has been duly audited, and found correct.

Wm. H. Doel, *President.*

Wm. Sanderson, *Secretary.*

REPORT

OF THE

FRUIT GROWERS' ASSOCIATION

OF ONTARIO,

FOR THE YEAR 1883.

Printed by Order of the Legislative Assembly.

Toronto:
PRINTED BY C. BLACKETT ROBINSON, 5 JORDAN STREET.
1884.

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NAMES.	POST OFFICE.
Allan, A. McD.	Goderich.
Armstrong	St. Catharines.
Arnold, Chas.	Paris.
Ball, Robt. N.	Niagara.
Beadle, D. W.	St. Catharines.
Beall, Thos.	Lindsay.
Biggar, C. H.	Drummondville.
Bucke, P. E.	Ottawa.
Camp, Geo.	St. Catharines.
Coot, Geo.	Dundas.
Croil, John	Aultsville.
Croft, M.	Dundas.
Cross, L., Dr.	St. Catharines.
Dempsey, P. C.	Trenton.
Denton, John M.	London.
Doel, W. H.	Doncaster.
Drury, Chas.	Crownhill.
Fenton, C. M.	St. Catharines.
Gilchrist, A.	Guelph.
Gott, B.	Arkona.
Goodwin, Hiram	Thorold.
Gregory, R.	St. Catharines.
Hagaman, A.	Oakville.
Hill, James	Campden.
Hilborn, W. H.	Arkona.
Hoag, C. L.	Lockport.
Honsberger, D.	Jordan.
Kitchen, Moses A.	Bloomsburg.
Leslie, Geo.	Leslie.
Morden, E.	Drummondville.
Morris, E.	Fonthill.
Moyer, A.	Jordan Station.
Read, W. H.	Port Dalhousie.
Reesor, Hon. D.	Markham.
Roy, Wm.	Owen Sound.
Saunders, Wm.	London.
Smith, A. M.	St. Catharines.
Smith, E. Ashley	Lockport.
Smallfield, W. E.	Renfrew.
Slight, H.	Toronto.
Weld, Wm.	London.
Wellington, W. E.	Toronto.
Williams, J. P.	Bloomfield.
Wismer, J. S.	Jordan.
Woolverton, Linus	Grimsby.
Wright, A. A.	Renfrew.

ANNUAL REPORT

OF THE

FRUIT GROWERS' ASSOCIATION

OF THE

PROVINCE OF ONTARIO FOR THE YEAR 1883.

To the Honourable the Commissioner of Agriculture:

My Dear Sir,—It is my privilege herewith to hand you the Fifteenth Annual Report of the Fruit Growers' Association of Ontario. It will be found to embrace all the discussions, carefully taken down by an able stenographer, and all the valuable papers read at the different meetings of the Association held during the year 1883.

The *Canadian Horticulturist* has been continued during the year. Each monthly number has contained twenty-four pages of reading matter, and a well-executed chromo-lithograph of some fruit, flower or vegetable, together with such other illustrations as would be of assistance to its readers in forming correct impressions of the subject in hand.

It is very gratifying to be able to state that the membership has increased during the year from 1,839 to 2,600, so that we now have the largest membership of any Fruit Growers' or Horticultural Society in America.

I have the honour to be

Your most obedient servant,

D. W. BEADLE, *Secretary.*

PROCEEDINGS AT THE ANNUAL MEETING.

The Annual Meeting of the Fruit Growers' Association of Ontario was held at Guelph, on the evening of Tuesday, September 25th, 1883, in the City Hall. The President, William Saunders, Esq., called the meeting to order.

The Minutes of the last Annual Meeting were read and confirmed.

The Directors' Report was read and received.

The Treasurer's Report was read, and referred to the Committee on Printing.

The President then read his annual address, which was received with thanks, and ordered to be published in the Annual Report.

The meeting proceeded to the election of officers for the ensuing year, with the following result :—

President—William Saunders, London. Vice-President—P. E. Bucke, Ottawa.

Directors—District No, 1, John Croil, Aultsville ; No. 2, A. A. Wright, Renfrew ; No. 3, R. J. Dunlop, Kingston ; No. 4, P. C. Dempsey, Trenton ; No. 5, Thos. Beall, Lindsay ; No. 6, George Leslie, Jr., Leslie ; No. 7, James Goldie, Guelph ; No. 8, A. M. Smith, St. Catharines ; No. 9, T. H. Parker, Woodstock ; No. 10, A. McD. Allan, Goderich ; No. 11, John M. Denton, London ; No. 12, Hugh Smith, Sarnia ; No. 13, Charles Hickling, Barrie.

Auditors—John Carnegie, Peterborough ; Charles Drury, Crown Hill.

THE AGRICULTURAL DIVISIONS.

No. 1. Stormont, Dundas, Glengarry, Prescott and Cornwall.
" 2. Lanark, Renfrew, City of Ottawa, Carleton and Russell.
" 3. Frontenac, City of Kingston, Leeds, Grenville and Brockville.
" 4. Hastings, Prince Edward, Lennox and Addington.
" 5. Durham, Northumberland, Peterborough and Victoria, including Haliburton.
" 6. York, Ontario, Peel, Cardwell and City of Toronto.
" 7. Wellington, Waterloo, Wentworth, Halton, Dufferin and City of Hamilton.
" 8. Lincoln, Welland, Haldimand and Monck.
" 9. Elgin, Brant, Oxford and Norfolk.
" 10. Huron, Bruce and Grey.
" 11. Perth, Middlesex and City of London.
" 12. Essex, Kent and Lambton.
" 13. Algoma, Simcoe, Muskoka and Parry Sound.

DIRECTORS' REPORT.

To the Members of the Fruit Growers' Association of Ontario:

GENTLEMEN.—In accordance with the rules of our Association and the dictates of our own inclinations, we present to you our report of what has been done during the year that now closes. You were pleased to confide the management to our hands at the annual meeting held in the city of Kingston, on the 19th of September, 1882. The gentleman whom you chose to represent the Seventh District, W. H. Mills, Esq., declined to act, and in accordance with the provisions of the Agricultural and Arts Act, the Hon. the Commissioner of Agriculture appointed C. P. Carpenter, Esq., of Winona, to fill the vacancy.

On the fifteenth of April last the director for the Ninth District was taken from us by death—the venerable Charles Arnold, Esq., and that district has remained without a representative for the rest of the year. This district has lost a most faithful and painstaking director, who, at much cost of personal inconvenience, sought to promote and extend the usefulness of our Association, not only within the bounds of his own division, but throughout the Province. May his mantle fall upon the shoulders of him whom you shall choose for his successor.

The continued growth of our membership, which, during the year, has increased from eighteen hundred and thirty-nine to two thousand and six hundred, we regard as an indication of an increasing interest in the subjects embraced within the scope of this Association, and an evidence that our efforts to obtain and disseminate information on these subjects have not been without benefit to our people.

At the commencement of the year your Directors made arrangements for the publication and illustration of two thousand copies of the *Canadian Horticulturist*, but the increase of membership compelled us at our meeting on the first of February last to order that the January number be reset and stereotyped, and that the February number and some of the subsequent numbers be also stereotyped, in order to be able to supply new members with all the numbers for the current year. It was also necessary to procure copies of the coloured plates for these additional numbers, which of course had to be prepared. These things caused considerable delay, whereby many of our members failed for a time to receive their copy of the *Horticulturist*. The Secretary endeavoured to have all these deficiencies supplied as soon as the requisite copies were obtained, but if any have failed to receive all the numbers, he is now in a position to supply them, and will be most happy to do so upon learning where they are required. In order to enable the directors to make arrangements for the publication of a sufficient number of copies of the *Horticulturist*, it is very important that members send in their annual fee of one dollar before the first day of January next. Of the magazine itself we can only say that every pains has been taken to secure suitable illustrations and such reading matter as would be interesting and useful. We think that if the members would communicate their experience and opinions to the Editor more frequently, for publication in our monthly, they would find it a great benefit to themselves, and thereby increase the popularity and usefulness of the *Canadian Horticulturist*.

The winter meeting was held in Toronto, and the summer meeting in St. Catharines, both of which were well attended, and the discussions at both taken down by an excellent shorthand reporter, for publication in full in the next Annual Report.

The Treasurer's Report shows the financial condition of the Society to be in a very satisfactory condition, the receipts being about sufficient to meet the current expenses.

We trust that members of the Association will avail themselves of the opportunity, which the holding of our annual meeting in Guelph affords, of examining the work of fruit, forest, and ornamental planting which has been begun at the Agricultural College under your direction. We trust that what has been done will meet with your approbation, and we are confident that any suggestions that you may feel inclined to make in regard thereto, will be most gladly received by those who may have this matter under their more immediate charge.

In returning into your hands the trust you have been pleased to commit to our keeping during the past year, we take the liberty of mentioning to you that some complaints

have come to our ears to the effect that the same men are continued in office too long, and that the Association is becoming a close corporation whereby somebody is benefited in a manner not in accordance with the objects for which the Association was created. We wish on this point merely to say that while we are sure that these aspersions are wholly groundless, the remedy, if any be needed, is wholly in your hands, and that now is the time for you to make such changes in the composition of your board of directors as you may deem most likely to promote the usefulness of this Association.

All of which is respectfully submitted.

WILLIAM SAUNDERS, *President.*

TREASURER'S REPORT.

Receipts.	$ cts.
Members' fees	2,600 00
Government grant	1,800 00
Advertising	15 00
	4,415 00
Balance from last audit	1,058 45
Total	$5,473 45

Disbursements.		
Audit, 1882	$20 00	
Reporting meetings	86 00	
Printing, stitching, and mailing	1,540 77	
Express and freight	56 39	
Customs	10 82	
Caretaker of rooms	6 50	
Illustrations	495 72	
Postage and telegrams	115 94	
Commissions, collecting subscriptions	226 15	
Directors' and Committees' expenses (including arrears of 1881 and 1882)	1,010 74	
Guarantee premium	20 00	
Journal of Forestry	3 00	
Engrossing resolutions	12 00	
Stationery	13 10	
Advertising	14 60	
Plant distribution	454 54	
Directory of Ontario	4 00	
Sundries	20 28	
Clerk	125 00	
Secretary	200 00	
Editor	400 00	
		4,835 55
Balance		$637 90

The foregoing is a correct abstract of the Treasurer's Account for the year ending September 24, 1883.

JNO. A. BRUCE,
ANGUS SUTHERLAND, } *Auditors.*

Liabilities.	$ cts.
Audit for 1883	20 00
Printing, stitching and mailing	285 00
Illustrations	300 00
Reporter—summer meeting	55 00
Directors' expenses	125 00
Total liabilities	$785 00

St. Catharines, Ontario,
August 30, 1883.

We, the undersigned, appointed a Committee by the Board of Directors of the Fruit Growers' Association of Ontario for the purpose of examining the vouchers of the Secretary-Treasurer, have carefully examined the same, and find that the disbursements have been made in accordance with the instructions given him by the Board.

Wm. Saunders,
A. M. Smith.

ANNUAL ADDRESS OF THE PRESIDENT OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

Gentlemen,—In pursuance of a time-honoured custom, it now becomes my duty to present for your consideration a few thoughts relating to Horticulture—that department which treats of fruits first claiming our attention.

ATTRACTIVENESS OF THE SUBJECT.

With fruit culture so general, and fruit so much appreciated by you all, time would be wasted in the endeavour to prove that the cultivation of fruit is desirable. You all love fruit, and desire plenty of it. We love fruits for their beauty. How gracefully hangs a well-formed cluster of golden grapes; how elegant the forms, and how brilliant the tints of the apple, pear and peach, and how delicate the bloom on the plum. The fragrance of well-ripened fruit is charming, but the deliciousness of its flavour is perhaps the highest gratification to the senses, and furnishes the climax of all the pleasures which good fruits give us. This gratification needs no previous education to fit us for its enjoyment, for whether we revel in the refreshing acidity of the luscious strawberry, the melting flesh and rich flavour of a Bartlett or Seckel pear, or a Crawford peach, or indulge in the luxury of a Gravenstein apple, all are very good in their season, and are enjoyed as much and appreciated as fully by the mechanic or the farmer as by the most cultivated genius of the age.

ADVANTAGES OF FRUIT CULTURE.

The advantages resulting from an abundant supply of fruit are not far to seek. It is promotive of health, elevating to the taste, and adds greatly to life's enjoyments, while the disposal of the surplus is a source of considerable profit, and has of late years formed an important item in our exports. It also promotes home industries, as seen in the factories for canning and evaporating fruits which have of late been established in most of our fruit growing centres.

FRUIT GROWING CAPABILITIES OF ONTARIO.

The capabilities of our Province for fruit growing are very great, and perhaps no department of industry has made more rapid and universal growth than this during the the past ten or twenty years. In one of the recent returns of the Ontario Bureau of Industries the present acreage under orchard and garden in Ontario is estimated to be about 201,000 acres, which seems a noble showing, yet it is small when we consider the area of occupied land, which is over 21 millions of acres. The proportion then in orchard and garden combined is about $\frac{1}{10}$th of one per cent., and if we leave out of consideration the proportion under garden culture, the orchard proper would probably not exceed three-quarters of an acre in every hundred. Years ago many fears were expressed that the fruit market would soon be overstocked. With constantly improving shipping facilities, and new territory opening up, with our fruit drying and canning companies, which secure us the civilized world as a market, even for the fruits which are most tender and perishable, no further anxiety need be felt on this score.

Of all the counties in our Province, Middlesex has the largest quantity of land devoted to horticulture, having 12,000 acres out of a total occupied area of 758,000 acres, or about $1\frac{6}{10}$ per cent.; but some smaller counties have a much larger proportion. Lincoln has 7,800 acres out of 189,000 acres, or about 4 per cent.; Wentworth, $3\frac{1}{2}$ per cent.; Welland, $2\frac{8}{10}$; Prince Edward, $2\frac{5}{10}$; Norfolk, $2\frac{4}{10}$; Durham, $2\frac{1}{10}$; Oxford, $1\frac{9}{10}$; Halton, Waterloo and Haldemand, $1\frac{8}{10}$; York and Elgin, $1\frac{7}{10}$; Essex, Peel and Northumberland, $1\frac{1}{10}$; Kent, $1\frac{3}{10}$; Oxford, $1\frac{2}{10}$; Perth and Ontario, $1\frac{1}{10}$; Huron and Lambton, 1 per cent. The remaining counties have smaller proportions, varying from $\frac{1}{5}$ to $\frac{8}{10}$ of one per cent.

APPLES.

Most of the standard varieties of apples can be successfully grown over all that portion of Ontario west of a line drawn from the south-east extremity of the Georgian Bay to Lake Ontario, also east of this in the counties bordering on Lake Ontario and the River St. Lawrence. North of this area the climate is too severe for many of the tenderer sorts, but a few of the hardier varieties will succeed in most localities.

PEARS.

Pears can be grown where the tenderer varieties of apples succeed, but they thrive best in the milder portions of the Province, especially in the neighbourhood of the lakes. In Huron, Lambton, Essex, Kent, Elgin, Norfolk, and in the Niagara peninsula they succeed well; they also thrive and do fairly well in many other western counties. In Essex, along the margin of the Detroit river, there are some of the largest and oldest pear trees on the continent, trees which will measure from seven to nine feet in circumference, range in height from 50 to 75 feet, and bear in good seasons from 15 to 25 bushels per tree. These trees are seedlings which are now upwards of a hundred years old, and as far as we have been able to learn are free from blight. Through the kindness of a friend residing in the neighbourhood, I have obtained during the past season samples of the fruit of several of these seedlings, and find that they vary considerably in size, from that of an ordinary Seckel to about double that size. Most of them are of very fair quality, with a granular flesh, more or less melting, sweet or slightly sub-acid, with a pleasant sprightly flavour, useful for the table and excellent for canning. These are doubtless the product of seed sown by some of the early French settlers, brought with them from their native land. It is hoped that from these seedlings a race of pears may yet be obtained hardier and longer-lived than any of the varieties at present cultivated, which will be almost if not entirely exempt from blight. Although pears are grown over a large area in Ontario, a considerable proportion of those found in the market are from the counties of Welland, Lincoln and Wentworth.

PLUMS.

Plum culture is usually subject to two very severe draw-backs—the curculio and the black-knot. In the northern part of the County of Grey, adjoining the Georgian Bay

we find a district almost free from curculio, where large quantities of plums are grown and shipped to other parts of the Province, and to the United States; but the black-knot, which prevails almost everywhere, is interfering with successful plum growing there as elsewhere. Plums may be grown with success in all the districts where the apple and the pear succeed, provided the trees are regularly jarred in the proper season for the curculio, and this pernicious insect destroyed.

CHERRIES.

The common red or Kentish cherry is grown in abundance throughout the greater part of Ontario; frequently bears good crops, and is a most useful and valuable fruit. The Early Richmond is also cultivated with much success. In the neighbourhood of the lakes the finer and sweeter varieties are produced, but the crop is less certain than that of most other fruits, and the cherries when ripening are much subject to rot.

PEACHES.

Peaches cannot be cultivated with profit over a very extended area. They are, however, grown in considerable quantities along the shores of Lakes Erie and Huron, and especially in the Niagara peninsula. A large proportion of those found in our markets are from the Niagara district.

GRAPES.

Most of the varieties of grapes in general cultivation may be grown in all the milder parts of Ontario, and in favourable localities as far east and north as Ottawa; but in short seasons in the less favoured localities they are sometimes cut by the frosts before fully ripe. Along the Lake Erie shore, and in the Niagara peninsula, they are produced in large quantities, and are a much more certain crop. As earlier ripening varieties are introduced the area of grape culture will become more extended, since the canes may be easily protected in the severest climates by covering them. Among the earlier sorts of promise Moore's Early is among the best, ripening about ten days earlier than the Concord. So many new seedlings are now being raised by experimenters every year that we may hope soon to have good varieties earlier than this.

SMALL FRUITS.

The smaller fruits such as raspberries, strawberries, currants, and the hardier varieties of gooseberries succeed almost everywhere, the snow being sufficient in most places to form a protective covering for such as need shelter in winter. Where snow is abundant and continues with little or no break throughout the season, as in the Ottawa valley, many of the tenderer raspberries can be grown; varieties which cannot be successfully cultivated in the warmer parts of the Province where there is less snow. I shall not attempt to pronounce on the relative merits of the many new candidates for favour among the strawberries: their name is legion, and so much depends on suitability of soil and the care with which they are cultivated that evidence will necessarily be conflicting. Among the newer raspberries the Cuthbert, or Queen of the Market, stands in the front rank. The fruit is large, of a handsome bright colour, and has an excellent flavour; the canes bear heavily and have thus far proved very hardy. There is also a new red currant to which I should like to call special attention. I refer to Fay's Prolific. The individual berries are very large, the bunch is long and the bushes are very prolific. As far as it has been tested this new red currant is generally regarded as a great acquisition.

EXTENDING THE AREA.

The acreage under fruit in this province might be greatly increased without danger of over-production, and efforts should be continued to extend the area of successful fruit culture until the inhabitants of our most northern districts shall be abundantly supplied

with this healthful and pleasant addition to their table. We may not be able to materially modify the severity of the winter temperature, but nature's forms are plastic, and trees may be produced which will adapt themselves to the severest climatic tests. It is one of the pleasing duties of the Fruit Growers' Association of Ontario to labour in this direction.

There are two methods by which this desired end may be reached. First, by introducing hardier varieties from the colder regions of Europe ; and second, by raising seedlings from the hardier varieties cultivated here. Most of our better kinds of fruit have come to us from the mild and humid climates of Europe, especially from France, Belgium, and Great Britain, or from districts in the United States south of us. It is an easy matter to extend the area of successful cultivation of a fruit tree a few degrees south, but much more difficult to grow it with success as much further north ; and with the force of such facts long felt it seems strange that until of late so little attention has been paid to the fruits grown in Europe in climates similar to or severer than our own. In northern Russia we find ranges of territory possessing such severe climates, where fruits have been grown on an extended scale for hundreds of years. The first efforts to introduce some of these hardy trees were made by the United States Government a few years ago, when, through the agency of the American Consuls at St. Petersburg and Moscow, scions were secured and propagated by the Department of Agriculture at Washington, and disseminated through some of the colder portions of the Western States. Some of the trees so obtained are now fruiting, and samples of the Russian apples grown in Minnesota are on exhibition here in considerable variety. It could not be expected that fruits obtained in this way through agents residing in large cities, who knew but little about fruit culture, and who had not specially studied the qualities and characteristics of fruit trees and their foliage, would in every instance be satisfactory, and the need was strongly felt that experts in fruit matters, specially fitted for their work should visit these northern countries and see these fruits in their native home, make such selections as they might think desirable, and gather all the information possible. Men well suited for this work were soon found, and last year Prof. Budd, of the State Agricultural College, Ames, Iowa, and Mr. Charles Gibb, of Abbotsford, in the Province of Quebec, visited Europe together for the purpose of entering upon this important investigation. The fruits of Western Europe can seldom be grown with success above latitude 45 in this country but these investigators found apple growing to be a great commercial industry, *the* industry in fact of the inhabitants of twelve peasant villages in Northern Russia above latitude 55, six hundred miles nearer the North Pole than the city of Quebec, and where the thermometer has registered 58° below zero. In this little group of villages the apple crop in a good season will realize at least fifty thousand dollars. The apple known as the Anis is the leading variety ; the Antonovka is also largely grown. This is the coldest profitable orchard region in the world ; it is situate in the southern part of the Government of Kasan, and apples have been cultivated there for hundreds of years. In the extreme northern limits of their growth all trees become dwarfed. The traveller notes this in ascending a high mountain, and the same rule applies to these northern apple trees ; they are reduced to the size of shrubs five or six feet high, and are planted in little clumps of two or three together, and these clumps ten feet apart each way, yet the apples are above medium size and of fine quality. On proceeding further south in Russia these same varieties of apple trees grow larger.

Varieties of the pear were found growing in latitude 54° making fine ornamental trees, and bearing fruit of fair quality for cooking. At this point the travellers found an orchard of about ten thousand trees consisting mainly of two varieties, one a small wild bergamot pear, with a very long stem, the other a small pyriform fruit. Further south, but still in very cold latitudes, pears of better quality were found.

The cherries of Northern Europe are of great value there. The Vladimir cherry is the most esteemed and is known all over Russia under this name. In size it is a bush rather than a tree, with small, narrow, thick foliage. In the Vladimir district many cherry growers have each from ten to fifteen thousand of these diminutive trees, and in the cherry season entire trains are laden with this product, bearing their burden to the neighbouring towns and cities. The Ostheim is another variety which is largely grown.

Both these cherries are dark red, becoming purplish red when very ripe; the flesh very dark, tender, juicy, with a pleasant flavour, sweet and sub-acid. The fruit is of fair size and the bushes very productive.

Plum trees similarly dwarfed, were also met with in abundance, of different varieties: some bearing red plums, others yellow, and a larger number blue. These differ in flavour, but some were estimated by the visitors as equal to the Lombard.

I am glad to be able to state that through the liberality of our Minister of Agriculture, arragements have been made to introduce into this Province all those northern fruits of promise, and we hope before another year has passed, to have most of them growing on the grounds of the Ontario Agricultural College here, and from thence to be enabled to disseminate them to be tested throughout the colder sections of our Province. We owe much to those gentlemen who have devoted their time and means to open up for us this new field in which to labour.

We have also learned from Mr. Gibb, who obtained the information in Russia, that the market of Pekin, in China, is supplied in season with large quantities of a variety of apricot different from those in general cultivation, which is of a very hardy type, and is produced in the Province of Mantchuria where the winter is quite severe. We have written to Pekin to procure seeds of this desirable fruit and hope to succeed thus in introducing it here.

The area of fruit culture may also be extended by raising seedlings from hardy varieties of fruit grown in our own country as far north as possible. Taken thus at their northern limits the seed will usually produce trees hardier than their parents, which will admit of their gradual extension still further north. Much may be done in this way by systematic and persistent effort, but it is slow work and will consume many years in its accomplishment. Ten years or more will be required to test the value of a seedling of the apple or pear, but from three to six years will suffice for the smaller fruits. This line of work should nevertheless be encouraged in every possible way, for although we may not ourselves live to see the full results of a series of efforts in this direction, we may thus be the means of greatly benefiting those who are to follow us, and of advancing the material progress of our country.

MORE FRUIT NEEDED.

In the south-western part of our Province we have a district admirably suited to the grape and peach. Along the shore of Lake Erie from Amherstburg to Point Pelee there are many thousands of acres where these fruits could be successfully grown. In the Niagara district also the quantity of land devoted to their cultivation might be greatly increased with profit.

Throughout all the apple growing region nothing will pay the farmer better than an orchard, and there should be one of at least five acres on every hundred acre farm. In planting such orchards care should be taken to avoid the mistake which has been made in so many instances, in selecting too many varieties, and especially too large a proportion of summer and autumn apples; since these ripen and must be marketed during a period when many other things necessarily claim the attention of the farmer. There are, however, a few varieties which will repay this attention, and the surrounding circumstances vary so greatly that no strict rule can be laid down for the guidance of all. If there is a good local market or good shipping facilities by water to the larger cities, first-class early apples can be disposed of at remunerative prices; but where such advantages do not exist it would be well to plant no more than needed to supply the home demand, giving the remainder of the space entirely to winter fruit.

THE AMERICAN POMOLOGICAL SOCIETY.

The biennial meeting of the American Promological Society was recently held in Philadelphia on the 12th, 13th and 14th of September, where our Association was represented by its President, who was glad to have the opportunity, amid so many great lights in the pomological world, to do what he could to give to the pomology of Ontario that

prominence which it deserves. The absence, through illness, of the venerable President of the Society, the Hon. Marshall P. Wilder, was much regretted, although the chair was ably filled by the Hon. Mr. Berckmans, of Georgia. There was a large collection of fine fruit on exhibition, especially of pears, of which Mr. Satterthwaite, of Jenkinstown, Pa., showed upwards of 200 varieties. Ellwanger and Barry, of Rochester, and the Hon. Marshall P. Wilder, each 100 varieties, in addition to which there were a number of smaller exhibitors. There were also large collections of apples, grapes and peaches; one of these, including 140 varieties of apples from Minnesota, is especially worthy of mention. In these collections there were many admirable specimens, reference to which would be more in place on some other occasion. The collection of palms and other greenhouse plants and flowers, shown in the large upper hall of the Pennsylvania Horticultural Society's building, was one of the finest it has ever been the privilege of your representative to look upon. Among many other rare novelties the new double red water lilies from Australia, and the famed Victoria Regia lily in flower, attracted much notice. The floral designs were superb and most elaborate.

FORESTRY.

In the important department of Forestry, which now comes within the scope of our Association, much useful work has been done. The report of the delegates appointed to attend the meetings of the American Forestry Congress last year, which was published as an appendix to our Report, was full of useful information; and has done much towards bringing about a healthy sentiment in favour of tree planting. Early in August last a delegation from this Association, consisting of your Secretary and President, were sent by the Commissioner of Agriculture to represent the Province of Ontario at the meeting of the Forestry Congress held at St. Paul's, Minnesota. The assembly was presided over by the United States Commissioner of Agriculture, Dr. Geo. B. Loring, and some important business transacted. Our sister Province of Quebec was represented by the Hon. Mr. Joly, of Quebec, and Mr. Stewart Thayne, of Ottawa. At the close of the meeting the delegates of your Association accompanied by the Hon. Mr. Joly, visited Manitoba where they were joined by Mr. Gibb, of Abbotsford. At the instance of the Deputy-Minister of Agriculture, a public meeting was called in Winnipeg, at which the Lieut.-Governor presided; where the visitors were glad to give to a large and deeply interested assembly, all the information at their command. As one of the results of our visit, a Provincial Association was there and then formed for the promotion of Horticulture and Forestry, and an order for hardy Russian fruits for Manitoba is now being forwarded along with that for Ontario.

Death has visited our ranks during the past year, and removed one of our busiest workers, whose successful record in the fields of Horticulture has given him a world-wide fame. Charles Arnold has gone to his reward. We shall greatly miss his pleasant, venerable face and wise counsel at our meetings. Many of us have lost in him a warm friend, whose memory will ever be fondly cherished.

All who have taken an active interest in our Association will be pleased to note its gradual but steady progress; the past year has added over 700 to our membership, which is now nearly 3,000. Much of this addition may fairly be attributed to the increasing popularity and usefulness of our monthly, the *Canadian Horticulturist*, so ably conducted by our much esteemed Secretary. It is my sincere hope that every year may add to the interest felt in the proceedings of this organization, until all lovers of fruit, forest and flowers in this Province shall be drawn within its fold, and become partakers in the benefits which it is ever seeking with liberal hand to distribute.

THE WINTER MEETING

Was held in the Council Chamber, City Hall, Toronto, on the 31st of January, and 1st of February, 1883.

President Saunders took the Chair, and called upon the Secretary to read the minutes of the last meeting, which were read and confirmed.

THE ENGLISH SPARROW.

The first item on the list of subjects for discussion was then taken up, viz.: "Is the English Sparrow an Advantage to the Fruit Grower or otherwise?"

Mr. Wellington.—I believe it was I who suggested this subject to the Secretary, and it was in this wise that I came to do it:—In conversation with a gentleman who devotes some attention to fruit growing in this section, he remarked to me, that he had lost his fruit through the sparrows eating the buds; and I noticed a plum tree in my own garden in which the sparrows seemed to be taking their meals off its buds. This gentleman also said that near the trees in which they seemed to congregate to a great extent he had young peas, and that rows of them were completely eaten off to the ground by the sparrows. So that they do not confine their diet altogether to insects, but when hungry, fruit buds, or anything in the vegetable line, is food to them.

Mr. Switzer.—Sparrows are favourites of mine, and I endeavoured to get them to my place when I first came to this country. I took good care of them in the winter, and made pets of them, being a bird coming from the country I myself came from; but so far as fruits are concerned, I must condemn them. I found blossoms lying at the bottoms of pear and plum trees on which they congregated, and at first I tried to make myself believe that they were eating the insects out of the buds; but I found at last that they had destroyed all the buds of my best pear and plum trees, so that on trees from which I had expected to have a large crop I had a mere nothing—no plums whatever, and but a very few pears. My grapes the sparrows did not seem to meddle with. Currants and gooseberries seemed also to have been left alone.

Mr. Beadle.—I cannot give you from personal observation, any light on this matter; but I received a communication from Mr. Knowlson, of Lindsay, which I have published in the *Horticulturist*, in which he says, that they completely destroyed the buds on his gooseberry bushes. They took the buds all off, and what they did not eat they left scattered on the ground, so that they destroyed his entire crop of fruit and very much damaged his bushes as well.

Mr. Morris.—Another great objection to the sparrows is that they drive away other birds that really are of benefit to fruit growers, birds that really do live on insects. I think some means ought to be devised of getting rid of the sparrows. I have but very few sparrows in my place, about eight or ten of them is all I have had this winter. I have very little experience in this matter therefore. I may say, however, that I have partridges about my place. I have always encouraged them; and in the winter of 1880-81, I suppose there might have been fifteen or twenty of them around my house. Sometimes I fed them, and sometimes I did not. However, I find that they eat the buds off my trees, especially of the ironwood trees. Almost every bud was eaten off the ironwood trees.

Mr. Bucke.—Some few years ago we were very much troubled with grasshoppers in Ottawa; but as soon as the sparrows began to multiply they cleared them out, and we have not seen any grasshoppers since.

Mr. Croil.—There are very few sparrows with us.

Mr. Wolverton.—There are very few at Grimsby.

Mr. Gott.—I am very sorry to hear these charges brought against the English sparrow, because I am an Englishman myself by birth, and also by sentiment to some extent. I have not much experience with the English sparrow, because there are very few of them in our locality; but I should like some further observations of their habits in regard to this matter to be made, in order to ascertain whether these charges which are made against them, are well-founded or not.

Mr. A. McD. Allen.—We have not had very extensive experience yet with the English sparrow; but we have had them in our section for some years, and I have been observing their habits carefully. There is no doubt they are a very pugnacious bird, driving away almost every other bird. There is no doubt that the English sparrow eats the fruit buds. It preys on the gooseberry buds particularly. I do not think it eats the buds of the black currant, but it picks them off by the score and drops them; and this winter I have seen sparrows on the Norway spruce digging the buds out and eating them. Towards the spring they prey on the plum. They feed on the cherry too.

Mr. Doel, Toronto.—I have found sparrows beneficial rather than otherwise. My place being so near Toronto, they come out there in the summer from the city; and I have found that where they are the thickest, my fruit is the best and the insects are fewer. This season I had but one Duchess Pear though the blossoms set very heavy; but I attribute my loss there not to the sparrows, but to three cold days that we had during an easterly storm. Immediately after that storm the buds all dropped off. Not so with my Bartletts however; I had a good crop of them. Three years ago I overlooked two caterpillar nests in the apple trees in my orchard, and did not become aware of them until I saw some sparrows flying around those trees very lively; but when I went and looked at the nests, to my surprise there was nothing in them—the caterpillars were gone, and I noticed that from that time the sparrows were away from that place. I have not had a plum now for several years. Three years ago I had a very nice crop of them. Since then I have not had an average of one quart of plums a year. I do not attribute that to the sparrows, however. I do not find the sparrows so pugnacious. The smaller birds are about my house now as thick as ever, although I have seen flocks of fifty or sixty sparrows there. They drove the swallows away from underneath the eaves of my barn entirely, however, and took possession of their nests.

Mr. Chambers.—I have not a very large crop of fruit—what I have is mostly small currants and gooseberries; but I must say that as far as the gooseberries are concerned, the sparrows destroyed every bud. As to the currants, I cannot say so much. Last year I found the sparrows congregating in great numbers. I happen to live where there are thousands of them; that is, on the Exhibition Grounds. Last year I seeded down some ground with rye, and left it till it got ripe, and then the sparrows came in thousands, and I am sure they must have eaten one-third of it. So that whether they are of any benefit to the fruit grower or not, I am very certain they cannot be of any value to the farmer.

Mr. A. M. Brown.—Is there any gentleman here who can tell us with regard to their habit in the winter?

The President.—With regard to their destructiveness to the fruit buds, I had ample proof last spring. I had two large Flemish Beauty trees which promised to blossom abundantly. The buds opened, and the young flowers were expanding, when the sparrows set on them. I watched them, and saw the sparrows eat the buds out until there was not a single bud or blossom left on either of those trees. To make sure that I was not deceived, I had some sparrows killed, and I found in their crops some of the flowers and organs of the flowers. I did not find any insects. There is no doubt that sparrows consume a large number of insects; but they do not feed on them themselves—they feed their young with them, and as they are very prolific there is no doubt they destroy a large number of caterpillars. But those pests are easily got rid of otherwise, and there are a great many enemies to injurious insects, which have not the bad habits that sparrows have. I am quite confident, that so far as the fruit growers are concerned, the English sparrow is a decided injury to them. From the conformation of their beak it is quite evident that they are a grain-feeding bird. While, then, there is no doubt that they do destroy a large number of injurious insects, I think on the whole the evidence is against

them, so far as the fruit growers are concerned. Like Mr. Gott, I am an Englishman, and have some English sentiment in regard to things that are English, and I took some pains to assist in introducing the English sparrow into London; but I am now almost sorry I did it. In England, where they have these birds thickest, there is constantly a premium on their heads, and boys are employed to collect their eggs, and to stand in the fields where the grain is ripening, and make a clatter. In Australia they have had the same experience. The Government has lately passed a law ordering the destruction of these birds wherever they can be discovered. They find that their fruit crops there and their grain crops also, are being injured in consequence of the rapid multiplication of these voracious birds. If you get two or three pair into a district one year, you will have two or three hundred the next year, and two or three thousand the next year. I think the Fruit Growers' Association would do wisely in passing some resolution in favour of removing any restriction on the killing of the sparrows.

Mr. Arnold.—I was about to move that we try and find out the men who introduced the sparrow into this country, and when we have them, prosecute them; but as I find that you are one of those who have done wrong, and that you have confessed, I will forgive you. I am an Englishman; and I used, when a boy, to be paid twopence and threepence a dozen for collecting the eggs of the sparrow. I do not think they have caused a great deal of injury to the fruit in our section of the country as yet. They are numerous in the towns; but they have scarcely got into the country. They certainly drive away other birds. We frequently see them fighting them, and they will attack a bird about three times their size. I have understood, however, that there is one bird—I do not know the name of it—that "goes for" them and kills them rapidly.

The President.—It is the Butcher Bird.

Mr. Arnold.—If the sparrows would drive away the robins and the cherry birds I would say let them stay; I think they are greater nuisances than the sparrows.

Mr. Beadle.—I think it would be well for us to have a committee on ornithology in this association—a committee of men who are given to observing, and perhaps have a little fondness for observing, the habits of birds, and will give us a report every year, not only upon the sparrow, but upon any other bird that they find is injurious to the farmer or the fruit grower, either in eating the buds, or the fruit, or the flower. I move that the chairman take time to consider who are the men who will take a little pains with this matter, and perhaps shoot some of these birds and see what they feed on, and watch the nests and see what the chickens feed on. I will say a committee of three to begin with. I move that before this meeting closes the President specify three persons to be a committee on ornithology, with a request that they make observations on the habits of birds that are injurious to fruit growers and report at our next meeting.

Mr. A. M. Smith.—I think the suggestion is a very good one, and I second the motion.

Mr. Doel.—In Toronto there is a society called the Natural History Society. I think it would mutually benefit this society and that to correspond with them upon this very subject, as they make it one of special study. They have permission from the Government to obtain in season different kinds of birds for that purpose. They are now studying the very point that this motion covers.

The motion was carried.

Mr. Croil.—Scotch sparrows are, I think, the same as English sparrows; but, at any rate, I know that Scotch gardeners are very unfond of them. Because of the sparrows they have to keep their gooseberries and other small fruits continuously covered with nets at a very heavy expense.

The President.—I think there ought to be some practical outcome of all these discussions. I propose that some gentleman offer a resolution in order to test the feeling of the meeting in regard to this matter.

Mr. Wellington.—In order that the matter may be brought before the country in the manner indicated by the President I will move, that in the opinion of this society the sparrow is detrimental to the fruit grower, and that steps should be taken to do away with the sparrow to a great extent.

Mr. A. McD. Allan.—I will second that; and instead of saying "to a great extent," I would say "entirely."

Mr. Arnold.—Wouldn't it be as well to express our opinion also with regard to the injury it is to grain? We know it is an injury to grain.

Mr. Wellington.—I have no objection to adding that.

The resolution was then put to the meeting, and carried in the following form:—"That in the opinion of this Association the sparrow is injurious to the fruit grower and farmer."

THE MAY GRUB.—*Lachnosterna fusca.*

The next subject was then announced, viz., "The best method of combatting the large white grub which is so often injurious to the roots of plants."

Mr. Arnold.—It was I who suggested this subject; but I did so with a view of obtaining information as to how to combat it from the meeting. I have no method of my own except to catch the grub and pinch its head off. Some places in our section it destroys entire meadows—eats off the roots—and there is nothing left but a thin covering of dead grass. In newly planted strawberry beds I have known them run along the row after the plants have got nicely started perhaps, and cut everything off. It was in hopes of getting something from you, sir, as to the length of time the grub remains in the ground. They seem never to die. My impression is that the eggs are laid where there is grass or some protection of that sort. I find them worse always in a newly planted piece of ground—where we plant potatoes, for instance, on the sod. They seem to like strawberry roots better than any other roots that I know of. They will eat up potatoes and eat big holes in them.

The President.—In reply to Mr. Arnold's request as to the habit of the insect, I might say that the parent beetle lays its eggs about the roots of grass generally, just about the surface, and they are most commonly enclosed in little rolls. Although the course of the insect's life has not been carefully watched as yet, it is the common belief amongst those who have the best opportunity of observing, that the insect is three years in reaching maturity. You can generally find in the soil grubs of three distinct sizes; and on the basis of that this conclusion has been reached. The time when their powers of destructiveness is greatest is when they have reached the last stage of their existence—when they are the largest. The fact that it takes three years to reach the stage of the greatest maturity accounts for there being a greater number of grubs some years than others. As far as strawberry culture is concerned it is almost impossible to carry it on successfully where these insects are very abundant, because they devour all the succulent roots. I do not known that they are particularly partial to the strawberry; they eat the soft roots of all sorts of plants.

Mr. Roy.—Is that the same grub that is found in the hearts of dead trees?

The President.—No.

Mr. Denton.—Last year I examined four or five acres where, as Mr. Saunders says, there was this rolling up, and thousands upon thousands of those insects were there. The owner of the lot came along whilst I was examining it, and asked what had best be done. Said I "Turn in your hogs." He did so, and they rooted, and ate a great many of those insects. However, he had to plough the ground up, and last summer was the first summer he got anything like a crop off it. He thinks that he has destroyed the insects that were there, and my impression is that he has done so. In ploughing up sod for garden purposes you will often find a number of these insects, and it has struck me forcibly that they are the ones who destroyed the plants the first year. It is my opinion that when sod is ploughed it should be thoroughly cultivated in order to get rid of them.

Mr. Morris.—In the year 1881 we spent hundreds of dollars in fighting this insect, and in spite of all we could do our loss was still thousands of dollars. We found our ground literally alive with them—ground that had not been in sod for years. We found that they were worst in places that had been manured the year before. I suppose the beetle found that a good place to lay its eggs. On the south-east side of a slope we found them thick, while on the north-east side we would not find any, perhaps. My plan

to destroy it would be this. In the spring of the year when the beetle makes its appearance—which can be known by their flying against the window at night, attracted by the light—build bonfires through your grounds in the evenings, and I think they would fly into them. I believe the skunk is one of the greatest destroyers of this grub. It has been known to follow them up row after row and make a thorough work of cleaning them out. I have been asked if I have sown salt. I say "yes," and it does not seem to have any effect at all. I have sown ashes also, and it does not seem to affect them.

Mr. Page.—I have heard it stated that sowing salt kills these grubs.

Mr. Beall.—I recently saw an article, I think in the *Country Gentleman*, giving the opinion of a gentleman in the Western States, that it was not advisable to experiment too largely with specifics for anything of this sort. He said that he had been troubled a great deal with this white grub, and that he had been told that salt was an effectual remedy. He had tried that himself, putting on two or three times the quantity sometimes that he did in other places, and the only result was, that the more salt he fed the grubs the better they grew. Five or six years ago I lost an acre of onions by them myself. I mean the worm that runs along the surface.

The President.—That is not the same one.

Mr. Beall.—This I refer to, which was mentioned in the paper, was the white grub, whatever one that was.

The President.—That is the one under discussion.

Mr. Dempsey.—Six years ago we were terribly bothered on a sandy piece of land by those white grubs. Our strawberries and even our raspberries were injured by them, some of them destroyed. Two years after that, we noticed immense swarms of the May bettle in the air every evening. At the same time we had a large quantity of pine stumps that we did not know what to do with. One evening we touched fire to those, and I have not seen one-twentieth the quantity of the grubs since. I fancy that if we could get some combustible matter together and get up a good fire just in the dusk of a warm summer evening, we should destroy millions of these insects. I have noticed that they are quite inclined to deposit their eggs in the droppings of animals if they are left on the surface; or if manures are left on the surface, spread and not turned in, I notice that a great many thousands will be found. I have also observed a great many of the larvæ hatching by the side of a compost heap. Now, I fancy, it is best to turn our manure under the soil quickly after applying it, unless we apply it in the fall or winter. In this way, I think, we can prevent the attacks of these insects to a great extent. I am satisfied salt will destroy them. I am satisfied that wood ashes will also destroy them, but according to my experience, the quantity of salt or ashes that is required to destroy the insects will also destroy all vegetation.

Mr. Doel.—I know what this white grub is, and the May beetle too. I have noticed an immense quantity sometimes when the manure is put on. The grub is a very small one, and I have had the idea that it is the May beetle grub when it is first hatched. It is from an eighth to three-sixteenths of an inch long. It apparently would be white if it was not filled with some dark substance. It has a dark head. Is that the May beetle grub when it is first hatched?

The President.—I think not; I think that Mr. Dempsey is mistaken on that point. There are quite a number of insects belonging to a family called the Coprofagi that feed on dung, animal manures, and they are always present in very large numbers. They lay their eggs in manure, hatch in it, and the young are matured in it. I do not think there is any probability of the larvæ of this grub being seen; their eggs are laid close to the roots of plants, and when very young they burrow into the ground and commence to feed on the roots. I have no doubt that the May bugs deposit their eggs in manure, and find it a very pleasant place to hatch; but they at once penetrate under ground upon being hatched.

Mr. Doel.—I agree with Mr. Beall as to the May beetle grub coming up, and not burrowing along under the ground; that has been my experience with them. When I bought my place eleven years ago there was any quantity of them there; they are not near so thick now, although we come across a great many still. I attribute that to this:—I keep a number of fowls, and I have a great deal of small fruit, and in the spring when we are

working among these things we turn the poultry out and let them run loose, and they do no harm to the small fruit until a certain time; then we do that again in the fall. Whether that is the reason the grubs are kept down, and to a certain extent destroyed, I cannot say, but I find that the fowls eat an immense quantity of these grubs and also of the white grub.

Mr. Denton.—I would like to ask whether we are not confounding two insects. Does the May beetle ever come up as represented, and attack the roots of berries and onions and other things in this way?

The President.—As far as my experience goes it works altogether under the ground. There is a white grub, which I have no doubt is the grub that Mr. Doel refers to, the larvæ of one of the cut worms—one of our most common species. It is almost as large as the white grub that we are speaking of, and it runs along the ground just in the way Mr. Doel describes; but it is quite a different grub from this other. It seems to me that fires are one of the most practical methods we can adopt for the destruction of the insect. It is well known that they are attracted by light, and if they have opportunities of flying into the fire, they will always avail themselves of them. Another plan which is adopted sometimes with destructive insects of that character which fly to light readily, is to set a lamp in the middle of a tub of water on which is a layer of coal oil; they fly to the lamp, strike against it, and fall into the water. I am afraid there is nothing we can use in the ground for killing the grub which will not also kill the crop. The skunk is very useful indeed in destroying the grub; and there is nothing better than to turn a few hogs into the field—they devour immense quantities. But it seems that no means of practical value has ever been discovered for destroying the insect in strawberry beds; nothing which will not also destroy the plants.

Mr. Reesor.—I have found the method which the chairman has mentioned work well; that is, getting a large tub, filling it with soap suds, and putting a lamp in the tub. I find this a good way too to destroy the little miller which affects the beets. A great many other beetles and insects I find come to grief at the same time.

Mr. Dempsey.—I have noticed that where land can be thoroughly cultivated the insect seems to be readily picked up by birds and destroyed by the act of cultivating. We were preparing, a year ago last summer, a piece of land for strawberries, and there were some places that there was an accumulation of quite large stones which we had to cultivate around. Towards the end of the season we removed these, and invariably we found a large quantity of these white grubs under each stone. They destroyed a great many of our plants there. I think they deposit their eggs under stones, in stumps of trees, or under almost anything they can conveniently get to cover them. I think thorough cultivation, thorough cleaning of our land, will serve as a preventive to a certain extent, and that building fires in our grounds in the season of the year when we discover a number of these beetles flying in the air, will also have a good effect.

Col. McGill.—I have had no experience with the grub myself, but it has been very destructive in our neighbourhood this year. A gentleman I know, a very good farmer, had ten acres of peas completely destroyed by these large white grubs. About twenty-five or thirty acres in that neighbourhood was cut out, and after they began to cut out they tried salt, but it did not seem to affect the insect very much.

Mr. Dempsey.—Mr. Beall appeared to be mistaken as to the sort of worm which was destroying his crops. The cut worm used to bother us considerably in the cultivation of the melon; and I presume, that anyone who has ever undertaken to cultivate vegetables, has been annoyed more or less by it. A number of years ago a piece of our land became so infested with cut worms that we could produce nothing on it. We mixed a little plaster with Paris green, and just gave the plants a slight dose of that. Six or seven years have passed since the experiment was tried, and I have not seen a cut worm on the land since.

Mr. Morris.—I cannot altogether agree with the President, when he says it takes three years for this grub to develop and get to work. In the year 1880 we found nothing of it in our grounds; in 1881 it seemed to develop and get to work about July, and my idea was, that the eggs were laid that spring. The beetles were very numerous that spring; we could not open our door but any number of them would fly in. About August or Sep-

tember they seemed to get nearly full grown; and strange to say, the following spring, —that is, this last spring—there were very few to be seen in my grounds, and during the summer they entirely disappeared.

The PRESIDENT.—I said it took three years for them to attain the largest size. They are working all the time during the three years; but being of a small size, their work does not attract the same attention that it does when they are three years old and matured.

MR. ARNOLD.—Early in the spring I found them full sized, and late in the fall I also found some of them full sized and some not half grown. I have noticed this May beetle of greatest vigour generally, I think in June, when they are most numerous. Immense swarms of them are seen around cherry trees. I was wondering whether they laid their eggs near cherry trees at all; or were they feeding.

The PRESIDENT.—Yes, but not on the leaves.

MR. ARNOLD.—Then that would be the best time, of course, to catch them with fire. I cannot help thinking they must take more than one year to mature, because of their being of different sizes.

MR. MORRIS.—I believe myself that they will live in the ground for years; but I understood you to say that they do not get to work until the first year.

MR. DEMPSEY.—It appears to me that the May beetle, when it is flying in the spring, and feeding on the blossoms of our fruit trees, might be easily destroyed by applying Paris green, mixed with plaster, to the blossoms. However, that would not be as handy as building a fire.

The PRESIDENT.—It has been suggested—and, I believe, carried out practically—that where they congregate on trees those trees should be visited in the morning, when the insects are sluggish—they are very active at night—and the trees shaken, when the insects drop to the ground. They are then collected and killed. This might be added to the other measures of destroying them that have been suggested.

LETTER FROM SECRETARY OF MICHIGAN SOCIETY.

The Secretary here read a letter from Mr. Charles W. Garfield, Secretary of the Michigan State Horticultural Society, to the effect that he had expected to be present at our meeting, but that circumstances beyond his control would prevent his attendance, which he very deeply regretted.

MR. DEMPSEY.—I am very sorry indeed that Mr. Garfield is not able to be present with us. I can assure you that if he was here I should be more than delighted, and I am sure you would be also; because a more "live" fruit grower I have never heard speak than he. Mr. Garfield is capable of discussing these subjects in a way that interests you and prevents you from ever forgetting them. Just here I should speak a word with reference to the people of the State of Michigan.

The PRESIDENT.—I might just here remark that Mr. Dempsey went as a special delegate to attend their winter meeting, and what he is giving us now is, I suppose, the results of his experience there on that occasion.

MR. DEMPSEY.—When I arrived in Flint I proceeded to the hotel where the meeting was to take place, and the first man I met was Mr. Garfield at the door. I was a stranger to him; but I almost recognized him from his writings, which I had been permitted to read before. Everything was made as pleasant for me as possible. He introduced me to each one present separately, and they made everything very agreeable for me. The people of Flint offered readily—and I think the majority of those in attendance at the meeting accepted—to take care of all the strangers, and if any visitor to the city spent any money while there it was his own fault. I am too much of a Canadian to accept a billet, however; I had not a white choker on; I therefore kept my comfortable quarters at the hotel. I think I am safe in saying there were four hundred people present at the last meeting. I only wish as great an interest could be taken in such matters in this country.

As far as the people are concerned who are engaged in fruit culture in this country we have nothing to complain of: but not enough visitors attend our meetings. Where we hold our meetings I fancy the people do not recognize our mission as we think they ought to do. I feel this when I go away to such places as Flint.

RUSSET APPLES.

The next question on the programme was: "Why were Russet Apples less injured last spring than other sorts?"

Mr. Arnold.—I asked that question; and it was because I could not account for the fact that I did ask it. In our section of the country we had no apples at all last year but Russets. I was in hopes you, sir, had been investigating the matter yourself. I know you have a powerful microscope; and I was wondering whether the reason that the Russets escaped was owing to the thickness of its skin. I was in hopes that you might have put some of the skins under the microscope. I suppose the reason of the destruction of the apples generally was that the pollen was destroyed by being washed away before any of it was deposited on the pistil.

Mr. Woolverton.—I cannot answer the question that is asked here, but would remark that the Russet is not the only apple that escaped injury last year with us. Our Northern Spies escaped fully as well, if not better, than our Russets. I attribute that to the fact that the blossoms of the Northern Spy do not develop as early as those of other kinds. Of course that does not apply to the Russet, however.

Mr. Croil.—The Talman Sweet had very few spots with us this year.

Mr. Doel.—I never saw the Duchess of Oldenburg better than it was with me last year. It did not appear to be affected as a great many other apples were.

Mr. Wellington.—We found on our ground that the Wealthy and the Stump bore the heaviest crops of any. In fact, they were the only trees that we got anything off at all. The Russet with us was not the only one that failed.

Mr. Dempsey.—With us the Russets were affected; but it seemed to be local. I do not think they were affected any less than some other varieties. I did not see any blight upon the Baldwins. There were not a great many Baldwins cultivated in our section of the country. I saw in some sections a very little blight upon the Fameuse; but I never had so fine a crop of Fameuse apples. Perhaps I was mistaken, but I fancied that trees that had been most exhausted the year previous were the worst affected. We had very few Russets the year before last; consequently the crop was heavier last year. We had very few Baldwins also the year before, and the crop was heavy the last year. Some varieties of fruit that bore heavily the year previous, bloomed freely again last spring; but the blossoms of those trees apparently failed or succumbed at once to the fungus that appeared to be affecting the trees, or embryo rather. So that I was led to believe that the disease affected more severely those trees which had produced too heavily and been exhausted the year previously. Then, again, I noticed that when trees stood on sandy soil upon ridges on which there was no snow, and the frost consequently penetrated very deep in severe weather, a great many of the fibrous roots of those trees were very much affected, and some of the trees were really frozen dead. I believe that it is with a tree as it is with ourselves; if its feet are kept warm it can stand a greater degree of cold than if that is not done. I am convinced that the disease we are now speaking of was a result of there not being enough snow a year ago to protect the roots of the trees. I fancy that the trees failed in consequence of the mildew taking advantage of their feeble state.

Mr. Morris.—I think it would be well to consider, in connection with this, whether the Aphis has had anything to do with the failure of the crop this year. It is well known that the Aphis appeared in clouds almost just about the time that the fruit trees were in blossom; and I think that perhaps the more tender varieties—the feebler in growth—may have succumbed, owing to the leaves being eaten by the Aphis and the trees deprived of their sustenance in that way. The trees being in a feeble state, in consequence of these attacks, the fruit could not develop, and therefore dropped off. The Wealthy has borne

heavily with us this year. The trees of that variety were free from the attacks of the Aphis. Another variety that I noticed bore a good crop this year was the American Pippin ; but it always bears a good crop, even in years when the apple crop is almost a failure.

Mr. Gott.—Not only the fruit, but a good deal of the foliage was destroyed by it with us this year ; and it affected the trees constitutionally so that they scarcely recovered. I know one gentleman who had the Russet beside one of our public roads. The outside row of trees was American Russets, and the fruit on them was perfect. It was as fine a sample as I ever saw, and this was the case throughout the country generally. The Duchess of Oldenburg was notably excepted. May it not be that there is something constitutionally hardy in those varieties—something that enables them to resist those atmospheric influences to which they are subjected ? We know that the American Golden Russet is considered a very hardy tree. It will stand almost any kind of exposure. It will grow very well in most northern climates.

Mr. Wright.—Oh, no ; it will not. It is not every variety of apples we can grow. The Duchess of Oldenburg, the Wealthy, and the Tetofsky—the ironclads—were very good with us this year, but the Golden Russet we cannot raise at all at Renfrew.

Mr. Hopkins.—I have a little experience in raising apples, and this last year our Golden Russet succeeded the best of any. I have come here to learn from older experienced men than myself why that was the case. I gave it as a reason that about the time our fruit trees were in full bloom we had a very heavy north-east storm—a very cold storm—in which a good many of the gardeners in our locality lost their tomato plants, and other plants that were tender. I thought that perhaps because the Golden Russet was a tough tree it resisted this storm more successfully than other trees that had tenderer foliage, and of which the fruit would be tenderer. Why it was that our Golden Russets were better than other apples I could not say, but they were. We sold them at a far better price, and the apples were more perfect. They do not fall off like the Northern Spy.

Mr. Wright.—We import a large number of apples, and this season no apples have kept well with us except the Golden Russet. All the others have been very poor keepers indeed.

Col. McGill.—The apple that has failed with us has been the Talman Sweet. It was an immense crop, but when the fruit got to be about the size of chestnuts there came a very heavy wind, and they dropped off on the ground. After that we had a severe north-west storm that took two-thirds of the apples off the trees in that section. There was occasionally an orchard that escaped. From observation while travelling a good deal through the county that I live in, I think the Baldwin, the Northern Spy, and the Greening have succeeded the best. The Russet suffered as much as anything, with the exception of the Talman Sweet. The Talman Sweet was almost a failure in our section this year.

Mr. Roy, Owen Sound.—I do not think I ever saw the Golden Russet so smooth, and not only the Golden Russet but the Fameuse also. There were no specs on either of them this year. The Spy has also been very free of any defect of that kind. In fact all the apples in our section of the country have been good this year, and in large quantities. I am told that one house took away seven thousand barrels of apples from within a circuit of Owen Sound, and that every barrel of those went to England.

The President.—This evidence seems to be very contradictory, and yet I think it can all be harmonized with the facts. This cold rain storm prevailed all over the Province at the same time ; and we know that in the districts that Mr. Roy and Mr. Dempsey come from, apple trees bloom later than they do in the more southern parts of Ontario. This storm had the effect of washing the pollen off the stigmas, and it also deterred the insects that are always abroad in even weather of that kind, and which exert a great influence in fertilizing the flowers. The insects were prevented, by the wet weather, from visiting the flowers, and the rain washed a great deal of the pollen off. These circumstances are sufficient, I think, to account for the failure of the flowers to set where the trees were at the time in blossom. In the later districts the blossoms were later, and they escaped this storm. Following the storm a species of fungus attacked the leaves and

twigs as well as the fruit itself—a very low form of fungus. It penetrated the tissues of the leaves of the trees and caused them to turn brown, and to wither in some places, and in some instances to drop off entirely. It also attacked the stem of the apple, creeped along it to the fruit, and then spotted the apple; and the fruit being blighted by it, and the leaves (which are the lungs of the trees) being injured by it, the growth of the trees was checked in consequence, so that in some instances they did not make half their usual growth. This fungus appeared to prevail all over the western part of Ontario, and to a certain extent in that northern district also, but not so badly. The exemption of the Northern Spy may be accounted for from the fact that as it blossoms so much later than the other varieties it escaped the effects of the main portion of the unfavourable weather that prevailed at that time.

Mr. Denton.—On my return from London I visited a number of orchards from London south to Port Stanley. I went twenty miles north, and then I took as far as Arkona west, and I found just what you have stated with regard to the withered appearance of the fruit on many of the trees. The successful bearers were the Duchess of Oldenburg and a few Russets. At Port Stanley I found the trees on the banks very much injured by this fungus which you have referred to. The fruit when it was set, was very small and inferior, and was falling off in August. The crop did not amount to anything. On Mr. Gott's place and in the neighbourhood, I found the foliage in a far more healthy state than it was farther south. Farther south it was far more withered than it was in that neighbourhood. There was one orchard where I found all the fruit good. This orchard was planted twenty years ago, and when the gentleman was setting the trees out he put a belt of evergreens west, north, and east, leaving the other side open. These trees were in a comparatively flourishing condition, and had a very good crop of fruit on them. That is not very far from London. I value this result as showing that by breaking the force of the wind in this way the trees did not suffer as much from it as trees which were more exposed. I think the general impression wherever I went was that the pollen was destroyed by the cold wind, and the constitution of the trees injured by it to a certain extent.

Mr. Roy.—Out of sixty-five barrels of apples that I sold I do not think the parties threw out a barrel.

Mr. Arnold.—It is pretty evident that this blight was caused by this storm. Still, I am completely puzzled with regard to its affecting one while others escaped. I have the Spitzenburg growing within a very short distance of a sport of the Spitzenburg called the Moyle, and while I did not have an apple of the Spitzenburg I had a good crop on the Moyle. Now, why the storm should destroy the flowers of one and the other should escape is a mystery to me, and I am still inclined to think that there must be something in the skin of the Russet apple that enabled it to escape, while of the Spy, a smooth-skinned apple, we had not one in our neighbourhood, although it is a late flowering apple. The Duchess of Oldenburg is an early flowering tree, and we had not an apple on it either. And yet both of these trees were like a bouquet of flowers.

Mr. Croil.—I think I am safe in saying that out of a hundred barrels of Fameuse apples that I had there were not half a bushel that were not spotted; and it was not because the trees were not sheltered. They were sheltered on the east and on the west. Some said "your trees are too well sheltered." I said "no." I went into a neighbouring orchard, and the young trees were standing about thirty feet apart. These young trees had a few apples on them, Fameuse, and they were spotted just as badly as mine.

Mr. Allan, Goderich.—There seems to have been a good deal of sectional trouble about apples. With us there was not a great deal of difficulty so far as the crop was concerned. The Fameuse and the Rhode Island Greening we placed no value on on account of the spotting. The Baldwin was good; I shipped myself three thousand barrels of them to one firm in England. The Canada Red was a large crop, as was also the Wagener. The Rhode Island Greening was notably bad. There were just three varieties that we considered poor, the Fameuse, the Rhode Island Greening and the Newtown Pippin.

Mr. Croil.—My soil is light clay.

Mr. Denton.—At Port Stanley the soil is sandy, and it strikes me forcibly that the

trees growing there cannot be so vigorous as in your neighbourhood, growing on light clay. In that case I claim that the fungi and the storm were the cause of the destruction.

Mr. Doel.—I cannot agree with that altogether. I have some Duchesses on what is between clay and a sandy loam, some of it drifting sand; and there was not a more healthy tree than one on the drifting sand. I think it bore even more fruit than the trees on the heavier soil. My trees appear to be quite as healthy on the light sand as on the clay and sandy loam. I believe my place to be exceptionally situated, however; I am near the banks of the classic stream, the Don, and whereas three hundred yards, and less than that sometimes, north, south, east and west of me the tomatoes are cut down, mine are uninjured. Mine are not so subject to the effects of cold and frost as others all around me.

At this stage, it being half-past twelve o'clock, an intermission until two o'clock was taken.

THE BLACK SPOT ON THE APPLE.

Upon resuming business the meeting entered upon the discussion of the question, "The Black Spot or Fungus on the Apple. Can it be remedied, and how?"

Mr. Arnold.—I feel like answering that question by saying, "Yes" and "No." It can be, I think, prevented to a great extent. At least that is my own experience. It can be prevented to a great extent by keeping the trees well pruned; but I believe it never can be thoroughly prevented until we have control of the atmosphere. In my opinion it is the thin-skinned apples that suffer the most from it. I have always had a notion that it was caused by the moisture settling upon them, and then the bright sun, perhaps, causing a fungus to grow. I have always found that it is a benefit to have the trees well pruned; that they are not then so subject to this disease. The Fameuse, for instance, is an apple which, I believe, suffers in all parts of the country; but if the trees are well pruned they do not suffer so much as if the trees are thick. I am inclined to think, too, that lime in the soil has a good effect.

Mr. Roy.—Do you think lime sown on the soil would have the same effect as a limestone formation?

Mr. Arnold.—I question whether the roots get a great deal from limestone. It is burnt lime that I think is of great benefit. There is, no doubt, a great advantage in having a limestone soil for the roots of many trees.

Mr. Croil.—In the March number of the *Horticulturist* there was a paper on this subject. I had picked up an old number of the *Canada Farmer*, in which a gentleman stated that he had prevented the black spot on his apples by putting sulphur in the trees. I took a good deal of trouble to find him out; the article had been written some ten years, and I learned that he was a Mr. Merrill. This gentleman says:—

"Prescott, *January 10, 1882.*

"I have no doubt that I wrote the article mentioned in your letter of the 9th, for the *Canada Farmer*. The fruit of several of my apple trees had been affected with a black taint when they were about half grown; they then shrank and became worthless. I remembered a remedy I had read of when a boy, for caterpillars and other worms on apple trees, and I thought I would try it on my trees, as I was of opinion that the taint was occasioned by some kind of poison in the sap, and not from the attacks of moths in the fruit. Since that time my apples have been perfectly free from the taint; indeed, the change took place the first season after applying the remedy. I inserted the sulphur early in the spring, before the sap began to ascend into the branches. I cannot see that the trees have been injured by the holes having been bored into them; yet I think grafting wax is preferable to wooden plugs, anything to exclude the water."

Then the editor says:—"The above was received from Mr. John Croil, who remarks

that Mr. Merrill's plan is this:—'Early in February, with a three-quarter inch auger, bore half through the trees diagonally about two feet from the ground, fill the hole with sulphur, and cover the orifice with grafting wax or with a wooden plug.'"

I feared that the boring of so large a hole in the trees might injure them; but after I began to think of it I came to the conclusion that it was no worse than boring into maple trees; and I determined to try it. I think it was a little after this time of year that I did it. I took fifty trees, bored half way into them, filled the holes up with sulphur, got a plug for every tree, and plugged the holes up. They then looked so very nice that I thought I would try fifty more. I did the fifty more the year before last. This was the year before last. This spring, upon looking at the trees, I found that there was no difference between the trees I had put the sulphur in and the others; they were all just as bad as bad could be; so that while this plan looked remarkably well on paper it did not do well with my trees. I spoke to a neighbour of mine about it, and he said "You did wrong." He said, "How deep did your plug go into the tree?" I said "I cannot tell you exactly that; but the holes were bored in two inches or two inches and a-half, and I knocked the plug in as much as I could; probably it was in from half an inch to three-quarters of an inch." "Ah," he said, "that is where you missed it; the sulphur should go in between where the sap is and the bark of the tree." In that case, perhaps, grafting wax would be better than the plug for keeping the sulphur in; but I thought the plug would make the trees more weather proof.

Mr. Roy.—It seems to me that the reason it did not do good was that you put it too far in.

Mr. Croil.—That is what this gentleman said; and I intend, if I am spared this winter, to either bore these plugs out or try some more trees and use grafting wax.

Mr. Arnold.—I think Mr. Croil made another mistake; he did not bore the hole at the right time of the moon. (Laughter.)

The President.—I think there is one great difficulty in the way of this sulphur doing any good in either case. In the first place, it is not soluble in the sap; and if it does not dissolve in the sap I do not see how it can find its way over the trees. Then the sap passes by what is called endosmose from one cell to another; and in doing this it does not obtain for the tree any benefit from the sulphur, because it does not pass through the sulphur.

A Member.—I think it would be a very nice experiment to sow plaster of Paris on the ground in the spring or fall, and see whether that mode of feeding the trees with sulphur would have the desired effect.

The President.—I think if there is any possibility of utilizing sulphur for this purpose it would be by blowing it on the trees in the morning when the dew is on; because my opinion is that if there is any benefit to be derived from sulphur at all it must be through the production of sulphurous acid, and in its production sunlight and heat are necessary.

Mr. Dempsey.—This theory was advocated when I was quite young. I think it came with the black knot. Sulphur was tried in our section of the country very extensively, and I never saw any good from its use. Some covered the sulphur with grafting wax, and some by plugging the tree; and I never saw any advantage from either plan. I am satisfied we can easily manage the fungus growth which attacks our plum trees.

The President.—Excuse me, Mr. Dempsey, you are on the wrong subject.

Mr. Dempsey.—It amounts to the same thing. The first time I ever saw the effect of this disease on the apple was the time of the first visitation that we ever had of fire blight. There may be a difference in the form of attack; but it appears to me that in either instance it is the result of a fungus growth. The first attack of fire blight that we had was in sixty-something. The embryo fruit had just attained the size of a marrowfat pea in its green state. The disease spread from the fruit down the branches; and I lost some valuable pear trees that year in that way. It seems to me that there is a similarity between the two affections, although they do not develop the same.

Mr. A. M. Smith.—I have always noticed that we have never had any of it in our young and thrifty orchards where they have been well cultivated. Where we have had it in our section of the country it has been on old neglected trees, or on trees which were

sod-bound, or under some such circumstances as those. I have no doubt good cultivation would have as good an effect as anything.

Mr. Wright.—We do not suffer from the black spot in our section of the country.

Mr. Beadle.—I am going to invite Mr. Smith over next year, if there is any black spot, to show him some young trees, thrifty healthy, not over-loaded, in as fine a condition for bearing as any trees need be, and yet with this black spot abundant on them. I suppose if we could catch this fungus in its early growth and give it a good dose of sulphur that might kill it; but to do that would cost more than the apples were worth, I am afraid.

Mr. Croil.—I can endorse what our Secretary says—that it is as much on our young, well-trained trees as on any.

ONION CULTURE.

The next topic taken up was "Onion Culture; Is it profitable in view of the ravages of the maggot, and the prevalence of blight or rust at the tops? Can these be overcome, and how?"

Mr. Doel.—When I bought my place I was told it was noted for growing onions, and so I found it to be; but one year I could not get an onion. The white grub got so bad there that I gave up for two years, I think it was—trying to grow onions. Then three years ago I grew some for the first time again after manuring the land well, thoroughly preparing it, and liberally supplying it with salt well worked in. When I had had the land prepared in this way I put on it a good coating of soot out of the pipes, and I must say that I thought that helped the onions very much. I did not lose that year more than one third of the crop. The next year I did the same thing; that is, I just scattered it over the surface of the soil and raked it in. The next year I did the same again, and I do not think I lost more than one-sixth, if more than one-tenth. I think this helped to destroy the grubs very much. Last year I did the same again, though only on a small patch, and we lost very few—I do not think there was more than one out of fifteen or twenty that had a grub in it. Now I will give you a proof of the quality of that soil for onions. I have grown onions running eighteen pounds a dozen; and I have grown single onions weighing three-quarters of a pound.

Mr. Roy.—I have been an onion grower for some years, and I find a decoction of tobacco good for this pest. I put it in a watering pot and go over the onions once, or perhaps twice, in the season, and find it very effectual in preventing the maggot. Our lot is black loam with a sandy bottom—a splendid onion ground.

Mr. Beadle.—I have just experience enough to know that there is such a thing as this rust or blight on the tops of onions; but how it comes or how it is cured I cannot tell you. A great many of my neighbours complained of having lost their entire crop last summer by it. When the onions are attacked by this blight the stalks become almost white—they look as if they were covered by a bloom, and the onions cease to grow. The bulbs remained small, and there was a very small crop in my neighbourhood this last season; and the gardeners attribute that to this blight that comes on the onion. They do not know anything about how to prevent it; they are all at sea about it.

Mr. Gilchrist.—In 1881 we had a very dry July and August. We grew a few onions; that blight formed on the tops of them, and then they ceased to grow. That was, I think, some time in August. I was over at the Agricultural College, and examined the patch there and found the same thing. After I came home I examined the stalk under the microscope, and found that covered with red spiders. They had eaten the green off the stem, and the consequence was that the sap had ceased to run. It never attacked our black seed onions; it was only the tops. This was late in the season. There came rain afterwards, and that stopped it. In a very dry season the whole of our forests is covered with red spiders. We are not troubled much with the maggot; but on sandy soil it is very prevalent. I do not know any remedy. While conversing with Mr. ——— in Detroit last summer I asked him if they had any remedy, and he said they

had not, but when it became very bad they moved their bed of onions from one part of the field to another. The maggot, he told me, went slowly; it generally commenced at the outside of a patch and worked inward. I think the onion will always be grown profitably in a certain section. It succeeds over a large territory in America. There may be some spots where it will not grow on account of the spider or the maggot; but I think on limey soil there will not be much trouble in growing a very large crop. We find European seed utterly useless in our country.

Mr. Denton.—Would you allow me to ask whether this maggot comes from the coleoptera or the lepidoptera, from a beetle or from a moth?

The President.—It is of the anthomyia family. The maggots deposit their eggs on the plant, and the young maggots burrow into the bulb. The fly is very active on the wing, and I do not see how the removal of the patch is beneficial.

Mr. Denton.—In what state does it remain in the winter?

Mr. Beadle.—It remains in the pupa state.

The Secretary here read the following paper on Onions, by

Alex. McD. Allan, Goderich.

The first requisite is to select a piece of good soil. It should be thoroughly drained, well-worked and entirely free from weeds. Even a poor soil can be cultivated and manured so as to grow a crop of onions, and this may do very well in cases where the grower has no other soil, and only grows a few for his own use. But if it is intended to grow for profit, the soil must be rich and friable, a gravelly soil will not suit. My method of cultivation, and that of many growers who make a success of it, is to plough in the fall, not over six inches deep for a first ploughing. If the land is not even, or is given to clod, it should be cross ploughed and left in that state so that the winter frosts may assist in pulverizing the soil. Early in spring, or indeed while the ground is still frozen, a liberal covering of well-rotted, barnyard manure may be spread over the ground, and when the soil becomes dry in early spring it should be harrowed until perfectly smooth, and the top soil and manure well mixed. If the soil is in good heart, ten loads of manure would be enough to the acre, and more should be added according to the state of the soil. Fifty or sixty bushels of unleached wood ashes to the acre, will also be found very beneficial. After the first ploughing, four inches is a sufficient depth for all after cultivation, as when the soil is worked deeper the roots strike down, and instead of well-shaped bulbs, we have what cultivators call "scallions," that is where they run into thick necks, instead of well rounded bulbs, with thin, neatly formed necks. It is always important to have good seed, and in order to be sure of this, I would advise every grower who cultivates for profit largely, to

RAISE HIS OWN SEED

every year. Where the seed is fresh and good, four pounds to the acre is sufficient, but where there is a doubt as to its freshness, five pounds should be sowed. If the soil is light and dry, the seed should be sowed an inch deep; if moist, half that depth is enough. I prefer sowing in rows, about fifteen inches apart, with a drill. After the plants appear the main thing is to keep the soil free from weeds, which can only be done by constant work with the hoe. The only enemy feared in the plot is the maggot, which is found in the young bulbs. As soon as a plant turns yellow or wilts, pull it up and destroy it with the family of maggots in the bulb and neck. There are a number of remedies or preventives which I have tried with considerable success. Where the grower has only a small garden bed to cultivate, he will find a sufficient quantity of soot in the house chimneys and stove pipes, to scatter along the rows and prevent the ravages of the maggot. But in field cultivation, powdered charcoal may be used in the same way as soot. Lime water sprinkled along the row, or lime used in small quantities is good. Soap suds is excellent, and at the same time nourishes the plants. But possibly the most effectual remedy, and the cheapest in field cultivation is paraffine oil, a pint to about ten gallons of water.

sprinkled from a watering can with a fine rose, twice or three times in the season. I have never found the maggot to be so troublesome where ashes and salt were used in the soil. Where the soil is kept in good heart and frequently stirred during the growing of the crop, I have never seen the least

DAMAGE FROM RUST OR BLIGHTING

of tops, and when I hear of this trouble, my experience tells me the cultivator himself is to blame, for allowing the soil to run down. The crop is more liable to blighting in a gravelly soil than in any other. There are many good varieties, but for profit I look upon the Yellow Danvers and Large Red Weathersfield as good as any. They will easily give five hundred bushels to the acre, and with care in cultivation, manuring and afterwork, seven hundred bushels can be got. When the tops fall and begin to wither, the crop should be picked and thrown into rows along the field, where they may be left until quite dry and seasoned. For winter keeping they must be stored in a dry place, if in a cellar, in bins or barrels. Moisture will cause them to rot readily. Onions will stand as great a degree of cold as apples without injury, and even if once frozen they can be shipped and used in that state to advantage. But after thawing out they will not keep well for any length of time.

MICHIGAN POMOLOGICAL SOCIETY.

The following report was then read :—

Report of the delegate appointed to represent the Fruit Growers' Association of Ontario at the Winter Meeting of the State Pomological Society of Michigan at Flint.

Your delegate appointed to meet with the Michigan Pomologists arrived in Flint in the afternoon of the 4th, and proceeded immediately to the High School Hall, where the meeting was appointed to take place. A number of persons had already assembled. The Hon. C. W. Garfield, the energetic Secretary, to whom so much credit belongs for the success of that Society, met me at the door, and gave me a very cordial reception, followed by an introduction to the members present, among whom was President T. T. Lyon. A few hours were then spent in roving about the city, which must be most beautiful in the summer, laid out as it is at right angles, streets broad, and the most of them planted with shade trees, that in summer must present a beautiful picture. Several long avenues of trees and some beautiful lawns seem to be well laid out and planted with shrubs and ornamental trees. The High School grounds are beautifully laid out, and add greatly to the beauty of the city, being located near the centre, and occupying nearly one whole square. No doubt, in course of time, it will present a sight that would do credit to any city. The landscape must be admired. The building is large, and well calculated to show there is a lively interest taken in the education of the rising generation, while the surroundings seem to be calculated to refine the taste and enliven the senses. The hall where our meeting was being held is large, warmed, and ventilated in a desirable manner, and well and comfortably seated. At one end shelves were rising one above the other, where a beautiful display of fruits, flowers and vegetables was arranged in the most tasteful manner.

There were shown about 125 plates of apples, principally Baldwins, Golden Russets, Red Canadas, Northern Spys, King of Tompkins, Rhode Island Greenings, Hubbardston Nonsuch, and Jonathan. This nearly covered the list of varieties. Nearly every plate would do credit to any country. About twenty plates of pears, consisting of Lawrence, Beurre d'Anjou, Beurre Clairgeau, and Winter Nelis. Most of them were very creditable and good specimens. Of grapes there were several exhibits—one plate of Malaga, grown in California, and a basketful of the Prentiss in good condition. This appears a good white grape, and seems to possess good keeping qualities. The Niagara was also on exhibition, and seemed to attract a good deal of attention. Judging from what we saw of it, there is not much doubt but that, if it will succeed in other places as it does at its

native home at Lockport, it will become the white grape for the million. There were plates of Rogers' Hybrids and others in a fair state of preservation. A few plates of Florida oranges added materially to this display of fruits; and a few pots of the most hardy varieties of greenhouse plants were placed among the fruits, which added materially to the beauty of the exhibit, and gave to the hall the appearance of summer. One would almost forget that the snow was blowing outside. A good display of jellies, canned and evaporated fruits, domestic wines, vinegar, etc., and an exhibit of vegetables added to the summer scene in winter.

THE SESSION

Was opened with prayer by the Rev. Mr. Crozier, after which Mayor Atwood delivered an address of welcome, which was responded to by President Lyon.

Professor Cook, of the Agricultural College, read a paper that was made more interesting by being illustrated by several diagrams. Subject: "Evolution."

Tuesday morning this and all the other sessions were opened by singing and music, by the pupils of the High School, which was done in the most pleasing and attractive manner, and had the effect of enlivening.

A paper was read by A. L. Aldrich, Esq. (editor of the *Flint Globe*), on the Horticultural Statistics of Genesee County. He stated that there were in bearing about 100,000 apple trees, which had produced 222,000 bushels, or about 2¼ bushels per tree, made up as follows:—

Shipping	78,500 bushels;	market value	$47,100
Dryed	20,000 "	"	16,000
Jellies	32,500 "	"	9,750
Vinegar and cider	91,000 "	"	27,000
			$99,850

Paying about one dollar per tree. This year, while he allowed that the high prices would partly make up for the short crop, he allowed that, by reckoning the interest at seven per cent. per annum, and forty trees to the acre to be the average, which would be $40 per acre, the average value of the apple orchards of that county would be about $660, or the whole county $1,400,000. In this calculation nearly 33⅓ per cent. of the entire crop was culls or inferior fruit.

Peaches, pears, plums and cherries had not been planted to any very great extent. Small fruit they had just commenced to plant. Grapes they had about forty acres bearing, giving this year about seventy-five tons; a market value of about $4,000, or about two and a-half cents per pound.

C. T. Rosencrans, Esq., of Flint, read a paper, "Varieties of Winter Apples for East Michigan." He recommended the Baldwin, Golden Russet, Northern Spy, Red Canada and Rhode Island Greening. Strange to say, but nevertheless a fact, a lively discussion followed, with the result of adding only the Jonathan to the list. Professor E. Baur, of Ann Arbor, and J. D. Baldwin, Esq., addressed the meeting upon the subject, "How can we increase the Profits of Fruit Growing?"

These addresses were listened to with considerable interest, and a lively discussion grew out of them.

The President's message was then read.

The following papers were read:—

H. W. Davis, Esq., Lapeer—"The Wager Peach."

A. S. Partridge, Esq., Flushing—"Stone Fruits." He recommended the people to plant more largely of peaches, plums and cherries, and a very large collection of varieties, adding that nearly all of them did well in East Michigan, and payed well for market purposes.

The President gave a paper upon "The Grape: its History, Pruning and Varieties." Also in his message, on Small Fruits, he spoke in the highest praise of Arnold's Pride Strawberry.

Professor BEAL, of the Agricultural College, read a paper on "The Structure and Growth of a Tree." This paper was made very interesting by a diagram, and everything was illustrated. It was to be regretted that this paper had to be cut short for want of time. It was very instructive upon the subject of botany.

C. M. WEED, Lansing, on "Insects new in Michigan." He referred principally to those insects that are now found infesting our grains and grain crops. A very lively discussion grew out of this, there being several entomologists present who took part in it.

Professor SATTERLEE, Agricultural College, on "The Potato: its History, Culture and Varieties." A discussion followed, a large majority of those present taking part. This is sufficient to show that the potato in Michigan has become a staple, and that a very large majority of the people have become interested in its culture. Many other very interesting papers were read, and some received as having been read, all of which would make a report tedious.

Dec. 6th, 7.30 p.m.—The large hall was packed with ladies and gentlemen, mostly from the city, when short addresses were given, alternated with music, vocal and instrumental. Reports of Committees were read, and the meeting that had been so instructive and pleasant was at an end.

Respectfully submitted,

P. C. DEMPSEY,
Delegate.

THE BLIGHT.

The following paper on the Blight, by Mr. A. Eby, was read by the Secretary:—

GENTLEMEN,—With your permission I will say a few words on this subject as observed by me in the Townships of Ellice and Downie, Perth County. It is not my intention to offer any explanations of the cause of the blight, but merely a few facts that may assist in understanding it.

Last spring our trees were literally covered with blossoms. I do not remember ever seeing the trees so blooming. It was a lovely sight to see them. The atmosphere was loaded with sweet scent. An abundance of fruit was promised. This was the more welcome as the fruit crop of the previous year had been a comparative failure. It was not long, however, before it was hinted that the fruit crop would be a failure. Investigation showed that in the old orchards the fruit was almost a total failure, while in young orchards and on young trees there was considerable fruit. But though many trees were full of fruit they did not grow as usual. The apples were covered with mould spots, and grew more rapidly on one side than the other, so that the fruit was nearly all warped. It was also less juicy than usual. With two exceptions the fruit was mostly seedlings.

The Northern Spys and the Russets were loaded with fruit, but even they, though mostly good and fine, were not all free from mould, and many were warped. Even the Russets, usually so clean, were not all free of mould. Snow apples were exceedingly scarce, and very small, rusty and juiceless. I may here remark that the Snow apples in this district are nearly if not all seedlings. I doubt whether there is any *bona fide* Fameuse in this district. There was more fruit in the Township of Ellice than in Downie, which lies south of Ellice. The eastern part of Ellice is a large uninhabited swamp. The most and best fruit was found in the orchards near the western edge of the swamp.

Small fruits were almost as scarce as apples. Pears did not suffer as much as the apples. Plums and cherries were very scarce. The plum trees were just recovering from being winter killed in the winter of 1880 and 1881.

As to the cause of the blight, there are numerous opinions. It is, however, well known that we had a heavy cold rain while the trees were in bloom. We also had a few rather sharp frosts about that time.

A. EBY.

MR. ROY.—I was down at the seaside some years ago, and noticed that around Saco Bay and Portland a large portion of the pear trees was blighted.

APPLES.

The following question was then discussed, viz., "Is it Profitable to plant Apples largely, and what varieties yield the best returns?"

Mr. Gott.—No doubt it would be very profitable to plant apples largely. As a general thing the crop is sure, and it is very profitable. The apples that are grown in Ontario are generally noted for their valuable qualities. They are perfect shippers and are beautifully coloured. I scarcely know what varieties would be the most profitable, but there are four well known amongst us that are very profitable. The first of these is undoubtedly the Baldwin. It is an apple that comes into bearing very early; the fruit is always acceptable, and commands good prices. Another apple that will no doubt be very profitable is the Ben Davis. It is of good quality, good flesh, fine colour, and grows in our country to great perfection. Another of these apples is the American Golden Russet. It is always acceptable everywhere, always a profitable apple to grow, and in foreign markets commands a good price. The fourth variety is the Northern Spy. It has more good qualities, we think, than any other apple that we have amongst us. It has a beautiful colour, is of fine size, and grows well under our conditions of climate. It is an apple that would command a big price, the only objection I have ever heard used against the growing of this fruit, is that the tree is long in coming into bearing; but we maintain that the fruit more than makes up for all the time that we are waiting for it, in its excellent qualities when we do get it.

The President.—I think we might save a little time by grouping this seventh subject along with the twenty-eighth: "The Best five Varieties of Winter Apples for market." If you please, we will group these two subjects, and at the close of the discussion we might take a vote of the members present, if it is thought desirable, as to the best five varieties for market. If any gentleman thinks we ought to have six good varieties there is no objection to his mentioning them.

Mr. Gott.—Allow me to introduce another one as the fifth. That shall be the Wagener. The tree of this variety is hardy, and a good bearer. The fruit is of very high internal qualities; it is of good shape, good flesh, and will command a high price.

Mr. Dempsey.—To the first question I think I can say "Yes." You will notice in Mr. Aldrich's paper respecting the fruits of Genesee County, Michigan, that he calculates that an apple orchard which is capable of producing two bushels and a peck to the tree is worth when it is bearing, $560 a tree, and that an investment of that kind would pay at the rate of seven per cent. I cannot see why it is that in our country men should not look upon planting largely for apples as a good investment, when I take into account the fact that throughout such a large area the soil is well adapted for the cultivation of this fruit. Many of the eastern counties of Ontario are, I think, fully better adapted for apple culture than some of the western ones, from the fact that we have a great deal of sandy soil in the east. I find that a sandy soil, though it may be a drifting sand, if it is properly managed, and it is very easily managed too, produces immense crops of apples. I would recommend everyone who has suitable soil to plant apples. With respect to varieties, those varieties that would succeed here, Toronto, would, perhaps, be worthless with us and with persons living farther north; and we should be very careful in reading the reports of these discussions, to look where any person resides who is recommending certain varieties of apples. In our section of the country there is no apple more profitable than the Baldwin, if we can get a spot where it can live throughout the winter; but if the Baldwin is planted on a clay soil, or a soil that is liable to encourage a late autumn growth, it is of very short duration with us. On the other hand, if we have a sandy soil that possesses an open subsoil as well, that is naturally well drained—a drifting sand like what would be on a gravel pit—you may depend upon it the Baldwin will pay well to cultivate. I would for such a soil recommend the Baldwin to be planted in preference to any other variety. I find that the Ben Davis succeeds on almost every soil. It is a good grower; it produces immense crops of fruit, and it pays well to thin the apples on the tree. If this is done it will produce invariably a good crop every year; but it is liable to produce much fruit that is next to worthless, if the whole of the apples are allowed to

remain on. I have been in sections of the country where they have condemned the Ben Davis; and I have observed almost invariably that this was the difficulty, that they had neglected to thin their fruit, and that there was so much of it that it was unreasonable to expect the tree to carry it all. We find next the Red Canada a very profitable fruit. It is a very pretty fruit, and though it is said by some to be a second quality of fruit I can assure you that it is a long way superior to a Baldwin or a Ben Davis when it is on the table. It is not so productive as some of the other varieties, never wants thinning: but it will produce fair crops, and commands a good price in the European markets. The Golden Russet produces a good crop, and commands a good price: but we are liable to get discouraged with it, because the tree produces light crops until it attains a considerable age. The Northern Spy with us is a very hardy tree until it begins to fruit, when it fails apparently to mature its wood sufficiently, and very often yields to the severity of our climate. We find that when it begins to bear that it is as tender a variety as any we cultivate. I am inclined to think that some of our newer varieties of apples are yet going to take a leading position. Allow me here to depart a little from my five varieties and to speak a little of those that are on the table. Arnold's Ontario did very well this year with me. Arnold's Pride, too, is a very pretty and a good apple. Both of those apples are with us superior to anything I have ever seen Mr. Arnold exhibit, so that I fancy they improve out of Mr. Arnold's hands, and that is saying a good deal for a fruit. There are a few of the Canadian Baldwins, referring to some of the apples on exhibition. When we get hold of a tree that will stand the climate of the Province of Quebec—those originated in the Province of Quebec—and produces as fine fruit as is lying on this end of the table, we may be sure that the variety is a fine one. Those specimens were grown on grafts that I got three years ago only. I got them from Mr. Gibb. He has been travelling through Russia examining the different fruits, and he writes that far north different varieties are succeeding. This is a specimen of the second crop from the grafts he sent me. The fruit hung abundantly on those trees this year, and none of them were blown off, so that I am looking upon that apple as one of the most promising we have, though it may fail yet. Speaking of apples that are suitable for cultivation in northern sections of our country, Judge Fralick sent me in the fall some specimens of apples that he had picked himself from trees that were growing one hundred miles north of Belleville, seedlings, I presume.

Mr. Beadle.—I thought it would be interesting here to give a paragraph from a paper placed in my hands by Mr. Allan. It is on "Apple Orchards, Planting, and After-care," but it also touches on the subject of varieties. I may preface this by saying that Mr. Allan has given considerable attention for a few years past to the shipping of apples to the English market, and this remark is based upon that experience. He says:

We have an article that is in keen demand in the British market, and the price is generally a secondary consideration. So long as the sample is choice no price is grudged that cash can cover. If I were planting an orchard in my own county (Huron), based upon my experience in shipping apples for the past few years, I would plant a thousand trees of the following kinds, viz.: Baldwin 500, Am. Golden Russet 200, Spy 100, King of Tompkins County 50, Wagener 50, Red Canada 50, Ribston Pippin 30, Mann 20. This would form my orchard for profit in shipping to Britain. To complete this I would add for home consumption, and possibly a few for local market, R. I. Greening 2, Wealthy 2, St. Lawrence 2, Duchess of Oldenburg 2, and Early Harvest 2. Orchardists make a very common mistake by planting too close. I consider forty feet close enough for an orchard of standard apples.

Mr. Wellington.—Regarding that last point that Mr. Beadle has read about planting, I think that we should take into consideration the section in which the planting is done. We are too apt, both in recommending varieties and in giving advice regarding the planting, to ignore the fact that a great deal of the country here in which apples can be grown successfully is cold, and that a great many varieties cannot be raised in them that we can raise successfully in the Niagara district. Now, this will apply to planting in such sections as the Niagara district, and perhaps in other sections of Canada where the climate is mild. In those sections forty feet is probably a better distance than one which is nearer; but in more northerly sections I would decidedly recommend that the trees be

planted nearer than forty feet. They do not grow to the same size in the northerly portions of the country that they do in more southerly sections; and then in the northerly sections they ought to form a protection to one another. Now, with regard to the question under discussion, "Is it Profitable to Plant Apples Largely?" I think there is no doubt about that. The success of our large fruit growers is a sufficient guarantee in that respect; but I do not think farmers or other people who generally plant, make apple-growing the success they might. They plant too many varieties. I have found in selling apple trees, that the great trouble is that people want one or two trees of every kind on the list, and the consequence is they have no one variety in sufficient quantity to induce buyers to come and give them good prices; and a great many of the varieties that they plant are unfit for the section in which they are planted. As to the best varieties to be grown in Canada for profit, that depends a good deal, as I have just shown, on the section of country. Where the Baldwin can be grown successfully there is no doubt it is one of the best on the list. The Ben Davis is, without doubt, one of the coming apples for the market. The demand for it is increasing every year, and in the British market it has been found to be a success. On account of its cropping qualities also, it pays. Another apple that has not been mentioned here is the American Pippin. I find that the demand for it is great in England. The price that it brings is generally in advance of what is given for most other varieties. In our section of the country—that is, near Fonthill—the fruit growers plant it before any other varieties. In the Annapolis valley, in Nova Scotia also, the demand for it is great; and large orchardists there claim that it is the best apple they can plant for profit. It is wonderfully productive, bearing even crops every year, and it is a great keeper.

The PRESIDENT.—Will you be kind enough to describe the apple?

MR. WELLINGTON.—It is medium to large; it is larger than Grimes' Golden. You can keep it successfully till June. The Golden Russet, of course, we are all acquainted with; I should put that on the list. Another apple that I would put on is the Mann. I believe that is one of the best apples we can grow in almost any section of Canada. It is a good bearer, and the fruit is large, the appearance fine, and it is a wonderful keeper. I have had specimens of Mann in June that were almost perfect, and had kept their flavour; in fact they are better at that time than they would be earlier—they seem to mellow up and attain their best flavour at that season. The Northern Spy is late in coming into bearing, but it certainly makes up for that when it does start. Another apple that I would put on the list for cold sections is the Hastings, a seedling of the Fameuse. It is a tree that can be classed amongst our ironclads, and that is something that must be taken into account in making a selection for the colder sections, where you cannot grow Baldwin and some others of the more tender varieties. As to profit, I think that fruit growing is just in its infancy in Canada. We have the great North-West to take into account as a market, and then the market that we already have in England is increasing. Not only are we able to send our fruit there in its raw state, but since the introduction of evaporators, we have taken to disposing of our more inferior apples in that way. Such apples evaporated and sent to countries where they cannot grow apples, such as the North-West, will bring us profits almost equal to our finest specimens sent raw. There is no question that evaporated apples are as nearly equal to apples in their original condition as it is possible to get anything. They are easily transported, and the more they are used the greater will be the demand for them.

MR. BEADLE.—There is a paragraph in Mr. Allan's paper touching on that point. He says: "Fruit growing will certainly take a leading position, nay, *I believe the first place*, in many sections, among the crops of farmers a few years hence. It is well known that Ontario-grown apples are second to none in the world in point of flavour (which is the highest point of merit). In the markets of Britain where our shippers compete with the surplus crop of other countries, our apples invariably stand at the top of the list, where proper care has been taken in selecting and packing. Now is the time to prepare for a crop that can be depended on to hold its own against all competitors. Now is the time to plant orchards—not a few trees, but large fields—of such varieties of the various fruits as each particular soil and exposure is best suited to produce, for the home and foreign markets' demand."

Mr. Reesor.—I have an orchard of young trees growing in Victoria county which I planted twenty feet apart, so that I have to cut away the branches. I agree that what are our five best varieties depends much upon the districts in which they are planted. I attended, during the past year, the meetings of every Agricultural Society in Muskoka and Parry Sound, and the only apple that came to maturity in that locality was the Duchess of Oldenburg.

Mr. Wolverton.—Of the winter varieties I have only four to recommend, and those four have been mentioned. Amongst others I would name the Baldwin, the Northern Spy, the Rox Russet, and the King of Tompkin's County. We find the King, in shipping to the Old Country, to command a higher price than any other apple, but it is not as good a bearer as the others. The Golden Russet has been recommended, but we have this objection to it in our district, that it ripens very early and drops to the ground almost before we can get time to gather it. The Wagener does not do well with us. It is very uneven in size, and the crop is very scanty. The Mann apple we grow to some extent, but I do not think very much of it. Its colour is not much in its favour. Where it is difficult to get to market, the summer and fall varieties are not profitable, but where the market is easy of access I think the Red Astrachan and the Duchess of Oldenburg are particularly desirable. The Greening we shall have to lay aside, I suppose, on account of spotting. It has been very troublesome this last season in that respect. Among the late fall apples the Ribston Pippin is very fine—some years excellent. Last year it was a very abundant bearer, but, as a rule of late years, it ripens too early, and on that account is not desirable.

Mr. Bucke.—I wish to call attention again to Cox's Orange Pippin as an apple for shipment to England. I believe there is more money in it for that purpose than in any other apple grown in Canada.

Mr. A. M. Smith.—I would like to ask Mr. Bucke it he knows of anyone who is shipping it there.

Mr. Bucke.—I do not. They know it well there though. I wish to know if there is anybody shipping it.

Mr. Wellington.—You want to make contracts ahead with nurserymen to get them to grow it. It is such an indifferent grower that you will never find it in a nurseryman's list, unless he is very sure he is going to get a good price for it.

Mr. Page.—I have grown the American Pippin for some years. I presume almost the first bearing trees of it were in my father's orchard in the County of Welland, near Fonthill. We find it to be a good bearer. Its selling qualities are good also. It brings the highest price of any apples we raise, on account of its good keeping qualities and good shipping qualities. The trees are thrifty; they grow in a nice shape, and grow quickly. The apples are produced in a sort of cluster, and are very easily gathered. As to the qualities of the apple, I cannot say so much in its favour. Its greatest recommendations are its keeping and shipping qualities.

Mr. Beall.—A few words took place between Mr. Wellington and another gentleman just now, which recalled an incident that occurred at the winter meeting a few years ago. I made the statement there that the Baldwin would not succeed more than a few miles north of Lake Ontario. Mr. Roy made the statement then that it would grow at Owen Sound. He was right and I right to a certain extent. The distance north does not amount to anything; but it is the distance above the lake. Owen Sound is, of course, near the lake, and its climate is tempered nicely by the lake breezes; and not only that, but the country all round the lake shore is more favourable to the growth of fruit than other places inland. I think the elevation above the lake should always be taken into consideration. The country spoken of by Mr. Reesor is generally about five hundred feet higher than the city of Toronto; and that makes a very great difference in the temperature of the climate. With reference to the different varieties, I have no doubt those named are excellent; but there is one which has not been mentioned that I must call your attention to. It is Grimes' Golden Pippin. I think it is one of the best flavoured apples that is grown. The tree in our country is perfectly hardy. There never was a decayed limb or leaf on any tree of it that I have. The trees bear abundantly, and the apples are of a fair, uniform size. I can say nothing against the tree.

The flavour of the fruit is second to almost no apple growing. As to whether it is profitable to grow apples—of course, one man may grow them profitably for the English market; another man may grow them profitably for the local market; and another man may grow them and never use them in the state in which we see them here, and still make great profit of them. I know of one particular locality where, for many years past, a very large number of apples has been grown—that is, a large number collectively. They grow in small orchards, and they are nearly all small apples. The consequence has been that for years back they have been a drug; they could not be sold. Thousands of bushels lay on the ground and rotted. Within the last year a cider mill has been established; and the owner buys anything in the shape of apples—apples that are half rotten, apples that the pigs have half eaten—he will take anything in the shape of apples and pay fifteen cents a bushel for all that he can get. This year he has used up a great number of thousands of bushels. He has had as many as eighty thousand bushels in stock at a time; and he makes a very good profit out of it. I am told that in the city of Hamilton a certain firm sends him the barrels free of expense, and he fills them, and gets fifteen cents a gallon for every gallon of cider he produces, and is making a fortune out of it. The consequence of this is that people who a few years ago were sick and tired of growing apples are now growing them largely and profitably.

Mr. A. M. Smith.—Mr. Page partly answered a question I was going to ask in regard to the apple he referred to—the American Pippin. I was going to ask him if he ever sold it twice to the same parties. In other words, I was going to ask something about the quality of it. We used to have a tree of it at Grimsby, and we never attempted to sell the apples from it. It was not fit to eat; but we knew it to be a very long keeper. I once offered a barrel of it to a party; and he said it was a very good shipper—it would ship to Texas and back again, but then it was no good.

Mr. Wellington.—The Montreal buyers ask for them in their circulars and in their letters year after year. We are too apt in judging of the quality of fruits to judge of it as experts. It is not so much the flavour of the fruit that makes them sell in the market as the appearance and keeping qualities. We must look to what the people want, and if they want a sour apple, give it to them if it pays, no matter whether it does suit my palate or yours, or whether it does not.

Mr. Dempsey.—We have canning establishments and jelly-making establishments. We have a gentleman present who has been engaged in gathering apples this season for those purposes. I would like to hear from him—Mr. Peck.

Mr. Peck.—I have been buying a good deal for canning purposes, and I found the one that paid the best was the Colvert.

Mr. Hopkins.—My experience of the Colvert is that we cannot sell it at all. We find that the apple that pays us best is a good solid winter apple. We can sell any quantity of that class of fruit. The best selling fruit that we have, however, is the Baldwin. The tree is a good grower, a good hardy tree—stands the cold well. Our extreme winters do not seem to have much effect on it; and it is a good bearer. The next to have would be the American Golden Russet. It is always in demand. This year it was the best producing fruit we had. The next to that would be the Northern Spy. One of the delegates present here has given you my experience in regard to that when he told you it was a late tree in coming to maturity, but that when it did come, it paid up for all the care and attention it had received. It produces fruit almost invariably every year. We hardly know what to say about the Rhode Island Greening. They are fine, thrifty trees, and until the last year or two they have turned out well. The last one on our list would be the Newtown Pippin. That is, with regard to the fruits which we grow in our locality, which is in the county of Halton. The question as to whether apple trees ought to be set out largely is one which no person can satisfactorily answer. The great North-West is being opened up, and they will perhaps be as successful in a few years in raising fruit as we are. Some say "No," and some say "Yes." I have been talking with some gentlemen from the North-West, and they seem to think that there is a probability of fruit being raised there. I have over two thousand trees, some of them bearing, and some just coming into bearing.

Mr. Denton.—As I said once before, ship your best fruit to England; it will

always, as Mr. McD. Allan has said, fetch its price. Further than that, you get a character; and you know what that is worth. Keep your character for honesty in shipping when you have it. Do not send wormy apples. In London, when I was there last, I had a conversation with one of the leading merchants in relation to Canadian fruit. I referred to this at the summer meeting. Since that time I have again had a communication from Mr. Hawley. And in relation to cheese just allow me to say here, a friend of mine in Ingersoll had an order for cheese for London. He came to our locality and purchased two thousand for the London market. They had some of our cheese before, and had highly appreciated it. So with the apples, just get our good apples into the London market once, and then you can continue to ship them there afterwards. The Ribston Pippin stands to-day a great favourite amongst the people in England; and I believe it will fetch a good price as well as the red apples, the Baldwin, and others. I am satisfied there is wealth in this branch of commerce.

Mr. Dempsey.—I ought to add a word with regard to certain localities in order that we may not be deceived as to the profits of apple culture. Within sight of my own door there is an apple orchard that is composed of Colverts, one hundred trees occupying less than two acres of land; and the crop of apples a year ago this fall was very near two hundred barrels that were suitable for shipping purposes. The proceeds from that quantity of land were but a few dollars short of five hundred. I thought that very remunera tive indeed. There is another orchard situated below Picton, on the opposite side of the bay from Picton, owned by Dr. Youngs, that is largely of Duchess of Oldenburg. The Doctor this last year had two hundred bushels of Duchess of Oldenburg, and for those he got the nice little figure of four dollars a barrel, or eight hundred dollars for his Duchess apples. I do not know how many acres he has The Doctor's orchard is situated upon a southern slope, a beautiful, warm gravelly soil; and his Duchesses came in ahead of our Red Astrachans. They came in about with the early harvest of the country. They were shipped to Montreal and readily picked up at about anything that was asked for them. The orchard of Colverts is situated on a nice rolling knoll. The soil is a very nice clay loam, and seems to be just suited to that variety of fruit; and consequently the man gets a very nice crop every year of very fine Colvert apples; and when he ships them early they really fetch more money in England than your Spys and your Baldwins, because they get there ahead of them. He told me himself that his Colverts, notwithstanding they suffered from the effects of the spring as other varieties did, brought him more money per barrel this last year than they did the year before, and they were used for canning this year to supply the people of Manitoba; and yet the man who canned them made three or four hundred per cent. on the apples.

Mr. A. McD. Allan.—There is no doubt a great deal of truth in what Mr. Dempsey says with regard to the Colvert apple. It is an apple that, if you pick it early before it is thoroughly ripe, and ship it to the English market early, will bring a high price. For a few years I have shipped a few barrels of each variety we grow in the Huron district in order to test the different varieties. I made a loss on a good many varieties; but on the whole I came out right. If I were compelled to select one apple to grow in my district for profit I would choose the Baldwin first undoubtedly, though the King of Tompkins County will often bring a higher price in some of the British markets. For instance, in London I get a higher price for the King of Tompkins County than for one variety of Baldwin. But the highest price I have got was for the Baldwins. I have taken the small Baldwins from the top of the tree, labelled them as "special dessert," and got higher prices for them than for any apples I have shipped. The American Golden Russet is an excellent apple for the shipper and for the grower. The Canada Red I find a very nice shipping apple, and an apple that takes very well in the old country market. I have had a high price for that for the last three years. But I have had more satisfaction in the general markets in England with the Baldwin and the American Golden Russet than with any other. The Wagener, too, I have had very good prices for in Glasgow. Of the Rhode Island Greening I have shipped as few this year as possible. A great deal depends, as to the price you are going to realize when you get across the ocean, on whether the apple has been properly sweated before you packed it. The Mann apple I have had a very good price for. It is a very nice apple to have,

and it ships splendidly, and keeps well; but if a person could pick it late in the season and ship it for spring use in the old country it would bring a better price. It is an excellent keeper. I shipped the Ontario this year and got a good price for it. It shipped well. The Northern Spy is an apple that I think very highly of, too. It is a good shipper, and when you get it of a medium size it takes well in the market. And that is a point a shipper has got to be very careful about—never to ship large apples. Last year we sent all our large apples to Chicago. We found that the retail merchants there wanted the largest possible apples. In the old country, medium sized apples are what are wanted; and if you ship in family lots you should have a nice-looking apple—a nice-shaped apple, and an apple of delicate colour. The old country market is somewhat different now from what it was three or four years ago. At that time you might ship almost any kind of apple that looked well; but now they know a great deal more about apples, and they look to quality a great deal more than they did. I have shipped a few barrels of seedling apples to the old country. For instance, there is the Gilliflower. I have shipped that. It is an apple that we think little or nothing of here, and yet I have got a very high price for it in the old country, simply because it had a nice colour. It was a light gilliflower. A person growing apples now for profit will have to consider the future of the British market. Then there is the North-West. I believe that there they never will be able to grow apples, except possibly a few Crabs or some apples of that kind. The market is, of course, very limited there as yet; but the time is coming when I believe that will be a very good market for fall apples. I do not speak of it as a market for fall apples at present. The Spitzenburg is a very excellent apple to ship to the old country, but I should be very sorry for the grower.

Mr. Beall.—Have you shipped Grimes' Golden?

Mr. Allan.—I have shipped Grimes' Golden also.

Mr. Beall.—How did it turn out?

Mr. Allan—It was about fourteenth or fifteenth in the list. The colour was against it. The quality is only medium. I do not consider it of a high quality.

Mr. Arnold.—How does it compare with Baldwin?

Mr. Allan.—It is finer in quality than Baldwin—a little better. Baldwin is not what we call a really good quality of apple.

A Member.—How does the Ribston Pippin sell there?

Mr. Allan.—The Ribston Pippin sells very well there. It is an apple that is grown very largely in England, but our Ribston Pippin will sell for three or four shillings more a barrel than their own will there.

Mr. Beadle.—I have been told that the Ribston Pippin would not ship well.

Mr. Allan.—It ships very well. You need to pick it a little on the early side.

Mr. Roy—Isn't it subject to the borer almost more than any other apple?

Mr. Allan.—Yes, it is subject to the borer, and with us it is not a large bearer.

Mr. Morris.—There is one point that has been overlooked in this discussion as to growing apples for profit, and that is the subject of worms. One thing in favour of the Mann apple is that it is very free from them. Nearly all the specimens are fit for market. In the case of the Baldwin apple we often see the entire tree almost worthless from worms. The Golden Russet is not so bad. In growing Spys I have noticed the quality very variable. Sometimes you will find one lot to be very fine and another lot a few miles away very poor, which shows us that the Spy is very choice as to its soil and its position. An objection to the Golden Russet is its tendency to grow full of limbs, in consequence of which the fruit becomes impaired if these are neglected. In speaking of large results from different varieties I am not inclined to go back on even the American Pippin. A gentleman living in our locality named Kennedy has an orchard of three or four acres, and the yield from that orchard averages about a thousand dollars a year; and he is going to plant out more trees, and they will still be American Pippins. I know of several orchards of three or four hundred trees of American Pippins planted in that locality. I contend that some varieties of apples can be grown to advantage for stock—can be grown cheaper than roots—turnips, carrots, or anything else of that kind. Such a variety is the American Pippin, which is almost sweet—not quite—which is rich, and

has a great deal of substance in it. I believe there is more value in a bushel of apples of that variety for stock, than in the same quantity of almost any root.

Mr. Weld, London.—My time has been so much occupied away from the farm of late years that I know but little about varieties. Some years ago I planted an orchard, the stock for which I procured from an American agent who came through the country, and among the varieties was the Gilliflower. That apple I have never yet seen at any exhibition in Canada that I remember of, and I have never seen any apple to equal it in quality. It has a very fine appearance too. The tree is a very slow grower, however, and it throws its limbs out in a most ungainly way. A nurseryman said its slowness of growth was the reason why it was not cultivated more. Once when purchasing some trees for an orchard of mine I left the selection of them very much to as good a nurseryman as I could get, Mr. George Leslie. The soil of the orchard was of a very porous nature. One part of it was rather inclined to clay—rather a hard clay; but the land was good. It was in good tilth; water never stood on it; the trees always throve admirably; but I have never been able to see where the profits have come in. It has never been a bearing orchard, though at first it did very well. I have planted trees so close together that their limbs intertwined; but if I were planting again I would plant further apart; though down in New Brunswick they have been able to raise good fruit when their tree stood as close together as seven feet apart, and thus afforded a protection to each other.

Mr. Roy.—This Colvert apple which has been so much spoken of here to-night and recommended, they make ornamental in France. That is, they make hedges of it. They plant it six, or eight, or ten feet apart, and plant posts between the trees, and then run wires through these posts, in this way they make a very ornamental hedge. There is one apple that has not been spoken of here at all, that is the Pomme Grise. The Fameuse and the Pomme Grise were the only apples that were grown around Montreal for a great number of years. Why the Pomme Grise is not more thought of in Ontario I do not know.

The President.—I think we may look forward to good results from the visit of Mr. Gibb, of Montreal, last year to Northern Europe, where he found them growing very hardy varieties of apples successfully, by planting the trees in groups. I have a promise from him, that we shall have a supply of the fruits he obtained in that part of the world; and I am in hopes that we shall be able to grow them in the North-West.

Mr. Wright.—I have laboured most industriously, and have taken a great deal of trouble in trying to find out varieties that would grow in our section, and I am firmly persuaded that we shall yet be able to grow a large quantity of apples in the North-West. I would therefore advise you not to depend too much on that country as a market for fruit. We have been able to get a large collection of apples that would grow in our section of the country, but the difficulty is that nearly all of them have been bad keepers. In recommending five apples, I would name the Wealthy first of all. I have never lost but three of them yet. The Duchess of Oldenburg does very well, but it is not so profitable an apple for this reason, that in our section of the country we sell apples by the pound—at five cents. Now, the Wealthy is a heavier apple than the Duchess of Oldenburg, and the consequence is that it sells for more. We used to grow the Tetofsky, but now we have a better apple than it, because the Tetofsky drops so much from the tree. Now we have a better Russian apple, the Yellow Transparent, that has not the defect that the Tetofsky has. Then there is the Peach. It is a good apple, subacid, of good flavour, looks well, and sells well in the market. But there is one that I think is going to produce better than any of these, that is the Mackintosh Red. I can grow a Mackintosh Red where I cannot grow a maple tree from the woods. It is more hardy than many of the other varieties. I have lost a few of them in the winter, but not so many as of any of the other varities. Then there is this Hastings apple, of which Mr. Dempsey kindly sent a graft. I have raised it for two years. It has never winter-killed, and I have great hopes that it will yet thrive in our section of the country. We can grow a sufficient number of apples for the fall, but the difficulty is to market them all—they rot and spoil before we can get them all sold. If, however, they can be canned and turned into jelly, we may yet grow them largely in our section. We have great hopes from the Canada Baldwin also. It possesses one great merit, and that is that it grows better on clay soil

than any other variety. To have an apple which does this is a great advantage to us who live in northern latitudes. If I were giving any advice with reference to the distance apart to set apple trees in a cold country, I would say, plant them fifteen feet apart. I would get the trees when they were two years old, and I would not cut a single branch off them. When they were grown up I would thin them out till they were thirty feet apart, and would then have a very good orchard. By the adopting of this plan the trees would protect one another while they were growing up.

On motion of Mr. Beadle, seconded by Mr. Beall, the President appointed the following gentlemen a committee to examine the fruit on exhibition and report thereon, viz: Messrs. Dempsey, Allan, Wellington, Leslie, and Wright.

POTATOES.

The next subject, "The Varieties of Potatoes most profitable for General Cultivation," was then taken up.

Mr. Arnold.—Of late years I have paid but little attention to potatoes. I grew many varieties in past years, and individuals sent me new varieties; but for this last two years I have confined myself to two kinds principally, and I give it as my opinion that the St. Patrick is the most productive potato that has ever been grown in this country. It is a very pretty potato, white and smooth. Its eating qualities varied considerably when I first got it. I planted it merely out of compliment to the man who sent it to me. I had no faith in it whatever. I planted it with the Beauty of Hebron, the Dempsey, and a number of others; and I have now no hesitation in saying it is the most productive potato I ever grew. Several other parties have grown it, and they all say the same thing. I think the soil on which potatoes are grown should be taken into consideration. Almost any potato will be bad if it is grown under the shade of trees or in a stiff clay soil, especially if it is planted late.

A Member.—Is the St. Patrick an early potato?

Mr. Arnold.—Yes; but I have not grown it by the side of the Early Rose.

Mr. Kitchen.—I have had some experience in growing potatoes, but it has been rather limited as far as experimenting goes. I planted quite a number of kinds this last season. My soil is, we consider, favourable to potatoes. It is a sandy loam, and we can plant almost any kind of potatoes we please in it, and the quality is generally very good; whereas in the section east of me it is a clay soil, and they often fail. From what experience I have had I would recommend the White Elephant as being a very profitable potato. We have had the Early Rose for a good many years, and it has succeeded very well; but we find it rather inclined to fail in size and in yield. On account of these defects the Late Rose seems to be preferable. The quality is perhaps as good; it is much more productive; the potatoes are better sized, and they are equally saleable. Some kinds that we planted last season we found very much earlier than others, but they were smaller—not so productive—and therefore we considered them not so profitable. We have had some experience this last season with the Climax, Late Rose, White Elephant, Washington New, Burbank Seedling, Beauty of Hebron, Norfolk, Scotch Kidney, Peach Blow, Early Vermont, White Rose, White Pinkeye, Michigan Russet, Early Rose, and Early Ohio. A few of these we felt rather inclined to discard. From our experimenting for one season I should say that the Early Ohio is a very early potato. From what we have seen of it we like it very well. The White Rose we think a very good potatoe. The Michigan Russet stands very well in our own county. The Late Rose and the White Elephant we consider the best; that is, as far as our experience went the past season. I might add that we have a good potato country—the long point country, as we call it—and of late years, since we have had shipping facilities, we find potatoes one of the best crops we can cultivate. It is a pretty sure crop—a safe crop to cultivate, and we find there is about as much money in it as in about anything else we can go into.

Mr. Beall.—Last year I gave a man who works for me, a little more than a pailful, but not half a bushel, of the Dempsey potato to plant in his ground, because he has ground very suitable for the growth of potatoes. From that he produced eighteen bushels of as fine potatoes as I ever saw. There has never been any manure in the land. It is principally black muck. In flavour, as far as I can judge, the Dempsey potato is the best. It suits my palate better than any other one that I know.

Mr. Johnson.—I have tried several varieties of potatoes, and for early potatoes I have settled on two varieties, Clarke's No. 1, and Beauty of Hebron; and I like Mammoth Pearl and White Elephant.

The President.—How are they with regard to productiveness?

Mr. Johnson.—They are all first-class, and first-class in quality also.

Mr. Wright.—For the last three or four years, while the Canadian Pacific Railway has been building, I have grown considerable potatoes, and the one that I could make the most money out of has invariably been the Early Rose. It came in earlier than any other, and I got a larger price for it, because I sold it to the contractors when no other potato was in. I grew the Beauty of Hebron side by side with the Early Rose for two or three years, and I have invariably found that the Early Rose was an earlier potato than the Beauty of Hebron. I also found that it was as productive, if not more so. When the Americans come there to buy, the first question they ask is, "have you any Roses?" I have grown the White Elephant. I took the first prize for it last year, in our town, over the Garnet Chili: but in that instance I thought the judges were wrong, and I told them so. I think the Garnet Chili is a better potato than the White Elephant. With me it does not rot so much as the White Elephant, and it keeps well away into the summer. The White Elephant also keeps well; still I would give the Garnet Chili and the Early Rose the preference over it, the Early Rose first and the Garnet Chili next.

At this stage of the proceedings, Mr. Clark, of Lockport, N. Y., was introduced to the meeting, by the President, as a representative of the Western New York Fruit Growers.

The President.—Our friends in Western New York always treat us in the most cordial manner when we go there; and I like to have an opportunity of introducing anyone coming from them to our members. I am sure they will all be glad to hear anything Mr. Clark may have to say.

Mr. Clark was warmly welcomed, and invited to take part in the proceedings.

Mr. A. M. Smith.—I have had very little experience in growing potatoes. I would merely say that I have grown the Dempsey potato and think very highly of it.

Mr. Dempsey.—I do not cultivate many varieties of potatoes. For an early potato I cultivate the Beauty of Hebron. We find that on our soil it will produce more than the Early Rose, and we think it a little better potato. I find that the soil has a good deal to do with the success of any variety of potato. With respect to my own seedling, it is a good potato grown on clay; but the first year that I produced it, it was as red as a beet all through the potato, and it was grown that season on sand. The second year I cultivated it, I, for curiosity, tried it on clay soil, and then found it a very superior potato, with only a slight trace of this red flesh just under the skin. That was gradually bred out, and now it generally cooks white, though sometimes, when grown on the sand, the red colour is liable to return. This potato is much finer grown on a clay soil than grown on a sandy soil. We grow it almost to the exclusion of everything else, for a late potato, and have for a number of years back. I have tested very few of the new varieties.

Mr. Fleming, Toronto.—I am not a grower of potatoes, but I think the Late Rose is one of the finest potatoes I have ever seen.

Mr. Dempsey.—We grow the Late Rose, but invariably we try to put it on sand. It succeeds well on sandy soil, but when we get off that it does not seem to be at home with us. Sometimes we will find a soft end to it. Sometimes the end of the potato will appear not to have matured, so that it cooks a little spongy; but on sand it seems to mature and become a very fine potato indeed. For market purposes we find

it very profitable. Scarcely anyone knows it from the Early Rose, and in the market it is taken for an Early Rose.

Mr. Hopkins.—The principal variety that we raise is the Early Rose. It is a good potato for home use; and in our market, Hamilton, we find that it brings as good, or perhaps a little better, price than any other. We are now introducing the Beauty of Hebron, and so far it has proved very successful. For a late potato, the White Elephant is coming in. We have not tested it very fully, but so far it has given very good satisfaction.

Mr. W. M. Robson, Lindsay.—The Early Rose is the potato that is mostly grown and mostly sold with us. I grew the Beauty of Hebron and Burbank Seedling, and the first year I thought it a very poor potato. By chance it got into my garden again, and I liked it very well.

Mr. Beadle.—I have been east, to Rochester, and when there I found some very large-sized potatoes. A gentleman had them on exhibition, of various sizes. Grown on sand, they were of medium size and looked very nice; grown on clay loam, they were very large and coarse looking; and grown on muck, they were of an intermediate size. That man's name was Corliss, and he called his potato the Corliss Wonder, or something like that. It was not an Elephant; it was bigger than an elephant, of course; it was bigger than the Corliss engine. I expect Mr. Clark will be able to tell us all about this potato, because he lives near Lockport. This gentleman told me that he had a barrel of these potatoes frozen; that he boiled them for the pigs, and that then they were so dry and mealy that he was almost sorry that he was not a pig himself.

Mr. Clark.—I am sorry that I am not able to give you any experience or instruction in regard to this mammoth potato that Mr. Beadle refers to. The first that I ever saw of it was at the time that it was introduced, last week in Rochester, and it was there that I first met the gentleman who introduced it, Mr. Corliss. We do not pretend to sell potatoes about Lockport for profit—just simply for family use, and to supply our home market. The varieties that we grow there are the old Early Rose—some are working into the Late Rose—and the Burbank Seedling. The Burbank Seedling is a favourite with us. I got it, for the first time, two years ago, and last year I grew it, and it did very well. One valuable quality of this potato is, that it keeps well until late in the summer without wilting. At the time that the Early Rose is past its time for cooking, and is withering and budding, the Burbank lies in the cellar, hard and plump, with the same exposure. Some of the farmers about are experimenting with the other new varieties, but I am not well enough acquainted with the results to know how they are succeeding.

Mr. A. M. Smith.—I know that Mr. Corliss very well; he is a gentleman who would not make any larger representation than any of us would, if we thought we had a pretty good thing to sell, I suppose.

The President.—I find I have overlooked something here, and that subject number twelve should have been discussed with number eleven, "Which Yields the Best Returns in our climate, Cultivation of Potatoes by hilling or ridging, or level cultivation?" It is not too late to take this up yet.

Mr. Croil.—We do not grow many kinds; but we find that the people want the Early Rose. However, I think the Beauty of Hebron is a better potato. The Beauty of Hebron has done very well with us; but a better potato than any of these is Mr. Dempsey's. Where our common potatoes were selling last fall at thirty cents a bushel, we could easily get forty and sometimes forty-five for it; and grown on any kind of soil it has turned out quite well with us. We have also tried the Late Rose and found it good. The Peerless I find a very good potato for using late into the spring; it grows very large but very soft, you hardly ever find one that is not hollow in the heart; it does not yield a very large crop, but it is a fine eating potato. The White Elephant I tried, but it did not produce well with me. I found it to be of a very good quality though; it boiled dry and nice. But the potato that beat them all for yield was the White Star. It did very well; I got thirty-eight pounds and a half from one potato that I got from Mr. Arnold. I planted it without any special care—no manure on the ground that year. I found the quality first rate.

Mr. Dempsey.—Some years ago I gave considerable attention to the cultivation of the potato, at all events, until I found out that I did not possess the proper disposition to make money by producing new potatoes. We use invariably to hill our potatoes, and we tested them in that way for several years in succession. We then use to hill one row, and flat cultivate another row at the side of it, and always we got more potatoes from the rows that we flat cultivated. When we examined the soil, we invariably found that where we planted our potatoes only about three feet apart, the roots of the potatoes extended from one row to the other. Now, the feeding root of the potato is generally near the centre of the row, and when we take the soil from the centre of the rows and throw it round the stalk, we are in my opinion, taking it from where it ought to be left. When the tops are very ripe, the potatoes are sometimes sunburned, but this is very rarely the case; then if we leave them in the ground until the frost comes, we sometimes find them touched by it. These are the only objections we find to flat culture. I am satisfied, that on our soil there is not less than twenty per cent. difference in favour of flat culture.

Mr. Beadle.—I notice that Mr. Sturtevant, who is in charge of the New York Experimental Station, has been studying up this subject, and he thinks we need to cultivate our potatoes a little according to the nature of the soil we have, and perhaps a little according to the variety. He has come to the conclusion, that the best yield of potatoes is obtained when the feeding roots are down in cool moist soil; and he urges, that the firmer tubers should be in a dryer and warmer position. I therefore judge that in a soil such as mine, which is a sandy loam, the level culture is the best; and I have been trying to get my gardener to cultivate at least one patch of potatoes level; but he has all the obstinacy of an Irishman; and if the potatoes, cultivating them the way he does, do not do as well here, in this somewhat torrid country, as they do in the cool, moist climate of the country he comes from, so much the worse for this country.

Mr. Doel.—The first time I ever saw potatoes cultivated on the flat was up near Windsor. As I was going through the garden of one of the largest suppliers of potatoes to the Detroit market, near Sandwich, he told me had been cultivating his potatoes on the level, and he said he got a much earlier, and a larger yield, and better potatoes in that way, and that they were more even in size than the potatoes he got when he hilled up. He said if he hilled them up now, the way he did was, that he ran the plough through them first, and then the cultivator when they got to have a little size. The next time he went through, he cultivated away from them so as to keep the ground level. Since that time we have raised our potatoes on the level, and I find that they are now better, and not so subject to get on the surface and green in the light as they were when we cultivated them in the hill. I think also that there are more of them. Can the potato digger be used where there is flat culture as well as it can be where potatoes are hilled? doesn't that go along the hills and turn them right over? In flat culture at my place we plough the usual depth, that would be, I think, about five or six inches, level the ground off, and plant the potatoes about three inches from the surface.

Mr. Slight, Toronto.—I was listening to hear whether there was anything spoken as to the best means of getting over the potato bug. Will late planting be successful in guarding against it? I have just one instance in my mind of a man who a year ago had a large crop of potatoes which he planted later than usual, and was not troubled with the potato bug at all.

The President.—I have no experience in that matter; but I have heard that the bugs will wait any length of time for the potatoes to come up. It is very seldom that the potato bug is absent in our section of the country.

Mr. Slight.—In this case the potatoes suffered nothing whatever from the potato bug, while those around, which were planted earlier, did.

Mr. Kitchen.—I find that the potato bugs come about whenever the potatoes do, whether they are planted early in the season or late. In regard to the working of potato diggers, we find there is very little difference whether the potatoes are hilled up or left level, the machine will follow the row. Our experience varies in regard to the hilling or level culture just according to the soil we are cultivating. On our dry soil (sandy loam) we prefer to leave the cultivation level; merely to work the potatoes with the ordinary corn cultivator and leave them without much hilling. I find that my neighbours on clay

soil find it a very uncertain speculation to raise potatoes without hilling them up well, from the fact that we sometimes have a wet season, and if the potatoes are cultivated on the level, they are likely to be lost. Last season there came a wet time in the spring after some of my neighbours had planted their potatoes, and when it had passed they could hardly find a potato growing, they seemed to have rotted just as soon as they were planted. The same thing sometimes happens after they do grow if there come a wet season in the early part of the summer, unless they are well hilled up; and even then, they sometimes rot in the row; but if they are well hilled up the wet is more likely to run away in the furrows.

FARMERS' GARDENS AND LAWNS.

Mr. A. M. Smith read the following paper :—

I have heard it hinted, that it was the practice of nurserymen while discussing or reading papers at Fruit Growers' meetings, to puff up something they had to sell, or in other words, to do a little advertising on the sly. I once attended a meeting of this kind (it was not in Canada, however), where three members of one firm read papers, one on new fruits, another on ornamental trees, the other on roses, all speaking in glowing terms of varieties they had for sale. Now I want it distinctly understood, that I have no Farmers' Lawns or Fruit Gardens for sale, and my motive in describing them will be similar to a lady's I once knew, who having tasted a peculiar kind of cake at a neighbour's, enquired very particularly how it was made. A friend who was present, and had also tasted it, expressed some surprise that she should want to know how to make it and asked her if she liked it. She answered "No," and gave as the reason why she wanted to know how it was made, was that she could tell her friends, and thus prevent them making one like it.

No class of men have better facilities for making lawns and fruit gardens, and beautifying their homes than farmers have, and no class make poorer use of them. Take the majority of farmers throughout the country, and compare their surroundings with the same number of mechanics, tradesmen or professional men of the same means in our villages, towns, and cities, and what a contrast in the taste displayed in ornamenting their houses and making them beautiful and attractive, as well as comfortable. There are very few mechanics of means, who have a lot but whose first thought is how to lay it out into a lawn and fruit garden, and make it attractive as well as useful. On the other hand, the majority of our farmers having numerous sites to select from, seldom, in building their homes, select one with the view of making a lawn, or setting aside a plot for a fruit or vegetable garden, or in any way do they study to get the best view, or make their homes attractive much less beautiful. Their main thought seems to be to get as near their work as they can, and to take up or waste—as they sometimes express it—as little land as possible; anyone familiar with the country, knows this to be a fact. If I had the descriptive powers adequate to the task, I would picture the average farmer's lawn, or "front yard," as it is generally termed, for the benefit of our city friends who are not familiar with country life—the *farmers* here know all about them—and if I make any mistakes they will please correct me. As before stated, it generally occupies but little space—on an average from fifty to one hundred yards square—sometimes a little more, but oftener a little less, in front of the house. It is usually surrounded with a picket fence, with a small gate in front, and a straight path leading up to the front door, generally a lane or carriage way fenced off on one side leading into the carriage house, which is a little to one side and back of the house, with a pig pen adjoining.

The plan of laying out and ornamenting the lawn varies with the taste of owners. Some of them are crowded with trees and shrubs enough for a lawn of several acres. Others have an assortment of fruit and ornamental trees, with an occasional bush of lilacs, snowballs, roses, etc., interspersed, perhaps, with a bed of pinks or poppies, and a few

hollyhocks, and not a small number of them are occupied with a few scraggly plum, pear or cherry trees, and ornamented with burdocks, Canada thistles and other choice native plants. Sometimes the uniform picket fence is dispensed with, the lawn is enlarged and surrounded with an antique rail fence, supported by a hedge row of plum or cherry sprouts, blackberry, raspberry, elder bushes, etc. These lawns generally have a display of rustic work, in the form of hen-coops, wood piles, and corn cribs, and if the farmer be a man of means, you may see several works of art strewn around in the shape of broken down reapers or mowers. threshing machines, or something of the kind. The fountains and statuary are generally combined in the form of a well and pump in front of the door. There is also, frequently, an assortment of lawn mowers scattered around the lawn ; and by the way, a farmer's lawn mower is quite an improvement on your city lawn mowers. It takes up the grass as fast as cut, besides fertilizing the ground as it goes. It is generally run by horse power, though sometimes by cows and sheep, and I have even seen it run by geese ; and sometimes when they want to stir up the soil they put on what is called a *rooter*, and run it by hog power. This tends to do away with the monotonous smoothness so common in city lawns, and gives the lawn a more rural aspect.

But I have been lingering on the lawn, and forgot the fruit and kitchen gardens. They too are generally surrounded with a picket fence, a little higher than that of the "front yard," to keep the hens out. They are sometimes on the opposite side of the lane from the lawn, and sometimes back near the drive house and pig pen, and are generally about the same size as the lawn. They have a row of currants and gooseberry bushes, and perhaps a few raspberries and blackberries around next the fence, and sometimes a few cherry or plum trees, with perhaps a quince bush or two. The interior is laid out into beds for lettuce, beets, onions, etc., with a patch left for cabbage, string beans and tomatoes. In rare cases you may find in some corner a trellis, with a few grape vines, and perhaps a bed of strawberries of some of the ancient varieties. This department of the farm is generally run by the women and boys, with a little help from the "hired man" before breakfast, and on rainy days. With the products of the garden, and potatoes from the field, apples from the orchard, and perhaps a few wild berries from the bush, I admit the farmer gets along very well and lives quite comfortable and makes money. But he knows very little about Bidwell, Manchester, Sharpless, or Arnold's Pride, strawberries ; or Cuthbert, Clark, or Gregg, raspberries ; or Brighton, Jessica, Pocklington, or Prentiss Grapes, or the fine varieties of cherries, pears, plums, peaches, etc., common in town and city gardens. Neither does he enjoy the fragrance of hyacinths, roses, tuberoses, etc. ; or feast his eyes on the beauties of lovely beds of geraniums, verbenas, phloxes, pansies, foliage plants, and other beautiful flowers and shrubs of a well kept lawn and garden.

But I would not have it understood that I am ridiculing or poking fun at the farmers, or speaking disparagingly of them. Far from it. I was a farmer once myself ; and they are among my best friends and customers. What would become of the nurseryman were it not for the farmers ? Where would he find a demand for his apple trees if the farmers' sheep and cattle did not eat half of them up, and if he did not let the grass grow around the remainder to make a harbour of refuge for the mice, so that they could assist in their consumption and give him a chance to replace them about every other year ? Where would the tree peddlers find customers for all their new varieties of ever or never bearing, and tree strawberries, and new ironclad Russian apples, and mulberries, wild-goose plums, blight-proof pears, etc. ?

Seriously, I would ask our farmers, if you took a little more pains in selecting your building sites, in laying out your grounds, planting shade and ornamental trees—even though they were common forest trees—and some beautiful native shrubs, with perhaps here and there a few new and rare ones, and spend as much money in procuring a few choice peach, plum, pear and other good fruit trees as you do in plug tobacco, and planted some extra grapes, gooseberries, currants, raspberries and strawberries in your gardens ; and if you have the means, put up a small conservatory, and stocked it with plants to make home cheerful and bright in the winter, don't you think your sons and daughters would be more contented at home and have less desire for city life and its attractions ? I do.

A POEM.

Mr. Arnold submitted the following verses, which he said he had written in pursuance of a request contained in a letter he had received from a high officer of the Association. He disclaimed any idea of calling them a poem :—

A SEAT ON THE HILL-TOP, BENEATH THE OLD TREE.

What man hath not found on this changeable earth,
Some shelter'd retreat to emotion give birth ;
Where memory, pointing to things that once were,
Imprints on our faces a smile and a tear.
To pride give his follies, to pomp his display,
Give to beauty her charms, give wealth what you may ;
Give to each of them all, but spare, spare for me,
The seat on the hill-top, beneath the old tree.

How can I but love thee, thou sacred spot !
And think of the loved ones who were but are not ;
When I view thine old trunk, draped o'er with the vine,
The woodbine and pipevine thy branches entwine :
And could but those dear ones who planted them there,
Sit again by my side, these blessings to share,
There's naught in this wide world I'd barter for thee,
My seat on the hill-top, beneath the old tree.

Since thou wert a sapling, thou noble old tree,
Thy youthful companions have long ceased to be ;
And oft have I wished thou would'st whisper and tell,
What shrubs and sweet flowers did then with thee dwell.
Did Hepatica's buds invite thee to Spring ?
And little blue harebell, the old year's knell ring ?
Or child of the forest, all brimful of glee,
Flee away to hill-top, beneath the old tree ?

Did brave Indian warrior find rest in thy shade ?
Or thy branches e'er shelter forlorn Indian maid ?
Or some betrayed mother, with babe at her breast,
For surely t'was here the weary might rest.
For the woes of mankind do *we* watch and weep,
And then, in our weariness, slumber and sleep ?
The spot on this green earth best suited must be
The seat on the hill-top, beneath the old tree.

BLACKBERRIES.

Mr. Linus Woolverton read the following paper :—

The Rosaceae is a very extensive family of plants, and embraces under its head nearly all our favourite fruits, as for example, the plum, the cherry, the peach, the pear, the strawberry, and the blackberry. Its fruits are almost without exception safe and nutritious food for man, the only poisonous elements being the prussic acid of the bark, leaves, and kernel of the peach, the poisonous laurel-water and oil of laurel, obtained from the cherry laurel; the foliage of the *Prunus Caroliniana*, which poisons cattle ; and one or two other instances. This family, therefore, is a very important one to the fruit-grower ; and if his botanical studies must be limited, it should at least reach as far as a scientific acquaint-

ance with those plants by which he is so constantly surrounded. I propose, therefore, in this paper, to deal with the blackberry, which, with the raspberry, is included under the genus rubus, or bramble.

There are several trailing varieties which are highly ornamental, among which may be mentioned the "Double Pink Blossomed," and the "Double White Blossomed" brambles, which are said to be very beautiful climbers, with pretty rose-like flowers appearing in June; but these are too tender to be grown in Canada. The Double Pink has not proved tender in my garden, but the White has.

The common high bush blackberry grows wild on sandy soils in Canada as far north as latitude 44°, especially in places favoured by the vicinity of a large body of water.

Of the cultivated varieties there are about twenty-five or thirty, which are esteemed valuable for cultivation by fruit-growers. A full list of the names and a complete description of which would be tedious here; therefore, for such full details I shall refer you to some of the many yellow and green coloured pamphlets, so diligently and so liberally scattered abroad by our enterprising nurserymen. There are three important varieties, which, at the present time, hold the first rank for planting in the fruit garden, viz.: in order of ripening, the Dorchester, the Kittatinny, and the New Rochelle or Lawton.

The *Dorchester*, as above indicated, is the earliest of the three, and has the merit of being ready for eating as soon as it turns black. It begins ripening about the first of August, and produces large crops of fine fruit. The berries are sweeter than those of the New Rochelle, and a little longer, sometimes measuring an inch and a-quarter.

The *Kittatinny* was found by a Mr. Woolverton growing wild on the Kittatinny Mountains of New Jersey. It has been very rapidly disseminated until it is now the leading variety for market. The fruit ripens earlier than the New Rochelle, and the canes are hardier. It continues in bearing for four or five weeks, and the berry is large, sweet and excellent. It may be grown anywhere in the peach region, the only hindrance to its cultivation being the yellow rust.

The *New Rochelle* was found by Mr. Lewis Seacor a wild seedling by the roadside in the town of New Rochelle in New York State. It is quite commonly called the Lawton. The discovery of these two prominent kinds growing wild, shows us how sportive nature often mocks the most eager and industrious experiments of the zealous cultivator; and produces without his aid varieties of fruit surpassing the results of years of faithful labour. The New Rochelle is a popular sort where the climate is not too severe, and it has been widely distributed. It is an excellent bearer, but the fruit is slow in ripening and has a very hard and sour core, which renders it unfit for table use, unless it is either cooked or left to become very ripe. Its chief merit is as a late variety, prolonging the season a week or so after the Kittatinny is over; its fine size also wins it much favour.

Besides the three varieties just named, there are several others which deserve a passing notice here.

The *Early Wilson* was introduced into Canada with great *eclat* a few years ago, as an early variety. It certainly yields beautiful berries of fine size, very melting and delicious. It is about as early as the Dorchester, and the whole crop ripens within a period of about two weeks, but it is rather tender for most parts of Ontario.

The *Brunton's Early* blackberry is a new sort, that is very highly commended by its disseminators. It is said to ripen in the latitude of Hamilton, as early as the 7th of July with the Doolittle raspberry. The fruit is of medium size, of a delicious flavour, and the yield is said to be abundant. It is about as tender as the New Rochelle, and consequently suited to only a few parts of Ontario.

But even this marvel of earliness is said to be surpassed by a still newer variety, Stayman's Early, a cut of which may be seen in the first number of the *Horticulturist* for the current year. The originator, Dr. Stayman, of Kansas, states that it is earlier than Brunton's Early, that it is an hermaphrodite, and excellent in quality of fruit. It appears to be a species somewhat allied to the black raspberry, as the berry is roundish, and the plants may be propagated by layering the tips. If this variety proves to be hardy it will indeed be a great acquisition.

Having spoken of several varieties worthy of commendation for their earliness, we will proceed to mention several whose chief merit consists in their hardiness.

The *Snyder* is a wonderfully productive variety, and so hardy that it succeeds well about Owen Sound, where the Kittatinny fails. The berry is sweet and melting, but its small size renders it unprofitable for market.

Taylor's Prolific is said to be quite as hardy as the Snyder, and being much larger, will surely be the more popular in market.

The *McCracken* is a new variety, claiming passing notice on account of its hardiness. Mr. Wm. McCracken, of Kansas, the owner of it, says it is both more hardy and more productive than the Snyder, that it is of the best flavour, without core, and earlier than the Kittatinny. It has not yet been fairly tested, however, and not at all in Canada.

Stone's Hardy is another new variety, which is being tested by D. W. Beadle, of St. Catharines. A notice of it appeared in the December number of the *Horticulturist* for 1882, from which we learn that it has been grown at Rockford, Ill., side by side with the Snyder, and the result of the comparison was much in favour of the former not only for hardiness, but also for productiveness, and quality of fruit.

The *Western Triumph* and the *Knox* are also recommended as very hardy and very productive varieties ; the latter is quite late in season, and the former has the merit of being quite fit for eating as soon as it turns black.

The *Agawam*, a variety lately originated in New England, may yet be the favourite, where hardiness is a requisite. It is not quite so large as the Kittatinny, and not equal to it in flavour, but it is melting and sweet to the centre, which cannot be said of the New Rochelle, and scarcely of the Kittatinny, unless dead ripe.

Twenty years ago, in 1863, the New York State Fruit Growers' Association recommended for general cultivation the Dorchester, the New Rochelle, and the Cut-leaved ; we, of to-day, are only prepared to recommend one change in this list for the same latitude, by substituting the Kittatinny for the Cut-leaved. The last named, also called the Parsley-leaved, is not at all desirable to the market gardener. It is a low trailing bush with branches some twenty feet long unless kept cut back. It is an old European variety, that is only useful in small gardens, where ornament is one of the appropriate accessories. There its curious parsley-like foliage will prove an object of interest to some, whose taste may be at the same time offended by its sweetness and peculiar musky flavour.

Epigrammatic as it may seem, there are *white* blackberries, *red* blackberries, *purple* blackberries, and *black* blackberries. Nature, however, as if jealous of such intrusions upon the consistency of her dominions, has given the pre-eminence to the black blackberry. An exception, however, seems likely to arise in the Texas Red Hybrid, noticed in the *Horticulturist*, January, 1883, which is reported to be earlier than the Wilson; a fine bearer, and possessed of very fine qualities as a dessert fruit.

PROPAGATION.

The blackberry may be so easily propagated that anyone having a few plants may soon have an abundance. A few rows may be set aside with this object in view, and the growth of suckers may be encouraged by ploughing or digging early in the season : or if this plan does not produce a sufficient number of plants, roots may be cut up into lengths of an inch or more, and planted in rows : each cutting will form a new plant, and thus any quantity may be obtained, which after one year's growth may be set out in the plantation. As a rule the blackberry cannot be propagated from layers of the tips, but one or two varieties lately introduced are reported to increase in that way, among them Stayman's Early.

PLANTATION.

Blackberries require a considerable amount of room, especially when laden down with fruit ; and therefore it is not wise to plant them closely. A distance of eight feet not too much between the rows, and the plants should be set at least three feet apart

in the rows, on which scale about eighteen hundred will be required for an acre. The duration of a plantation is about ten or fifteen years with proper cultivation.

SOIL.

Very rich soil should be avoided, else there is a tendency to a rank growth of bushes and consequent unfruitfulness. A wet undrained soil must also be avoided, or the canes will be the more liable to be winter killed. The soil best adapted to the blackberry is a light, sandy loam, but any soil upon which Indian corn succeeds, if not too wet, will be suitable. In its preparation strong manure must be avoided. Probably the wisest plan would be to apply well-rolled compost during the bearing season.

PRUNING.

The canes grow up one season, and fruit the next, after which, their object in life being accomplished, they die, and must be cut out. This may be done with a sickle and gloved hands, or with a long-handled brush hook. The rubbish may then be loaded with a fork upon a waggon or brush drag, and drawn away to be burned. In July and August the growing canes must be shortened in. The old mode of supporting the long branches by long rows of posts and wire was very cumbersome, and withal a useless expenditure. The shortening in may be done very expeditiously with a sickle or a pair of hedge shears. Each cane may be clipped back at a height of about three feet, in consequence side shoots will grow vigorously, and these in turn should be nipped off about a distance of a foot or eighteen inches from the main stalk. The bushes will then stand up without support, not only during the current season, but also during the succeeding season when loaded with fruit. By this method also a good pathway is left between the rows, which is very convenient for the pickers in gathering the fruit; indeed without it the horse could hardly be persuaded that it was his duty to drag a cultivator among the sharp thorns of interlacing branches. In pruning it is also necessary to thin out all the supernumerary suckers, four or five to each plant being quite as many as will grow well in company.

CULTIVATION.

After the second year the plough and spade should not be used in the blackberry plantation; for to disturb the roots, is to lessen the thrift of the vines, and also to cause an undue tendency to produce suckers, which absorb the strength of the parent bush. The cultivator and the hoe are the only tools needed, unless in some peculiar soils that harden so much that the plough must be sometimes used or cultivation abandoned.

YIELD.

For quantity of fruit probably none surpass the Snyder or Taylor's Prolific; but for size and productiveness both, the Kittatinny is the leading berry for Canada, where sufficiently hardy. The New Rochelle is quite equal to it in this respect, but is too tender for Canada, besides which, the fruit in hot seasons dries up and becomes very small. Taken as a whole blackberries may be expected to yield nearly the same number of quarts per acre as the strawberry. Under this head I do not think any story can be given by a Canadian fruit grower equal to the following, which was sent to the American *Agriculturist* for 1863, by a correspondent in Illinois. "The third season from planting a dozen bushes of the New Rochelle," he says, "I gathered the first ripe berries on the eighth of July, and the last on the twelfth of September. One stalk had on it fourteen hundred berries at one time, and commenced to ripen its first berries about the twenty-first of July, and finished on the twelfth of September, at which time I gathered one hundred and eighty-two ripe berries. Some of the berries from this bush measured four inches in circumference, and ten berries were laid in a line so as to measure eleven and a-half inches. The stalk was eleven feet in length, and had fifteen lateral branches. From the twelve bushes I gathered about three bushels of berries." We have read Western yarns

before and feel inclined to class this with them; but the writer speaks so positively that one can only wonder and express a wish that Canadian soil was equal to that of Illinois, while we hold in reserve our firm belief that it is quite as fertile.

INSECT ENEMIES.

The insect enemies of the blackberry are very few, and will offer little or no hindrance to its successful cultivation. Mr. Saunders in his essay on the raspberry, blackberry, and strawberry in 1870, speaks of a green worm covered with short spines, the larvæ of the raspberry saw-fly, which eats the soft parts of the leaves. The remedy for this is hellebore. The insect is not very common in Canada, at least not in the Niagara district. The tree cricket is of much more frequent occurrence, a grasshopper-like insect of a pale green colour, which deposits its long yellow eggs in rows in the heart of the branches; which in consequence break off easily or wither away. No other remedy for this has been suggested than the simple one of gathering and burning the affected limbs.

MARKETING.

The blackberry comes into market with the peach, and consequently the price to some extent is governed by the peach market, and sells best in seasons when the peach fails. Should the dreaded yellows cut off the peach orchards, the blackberry culturist may rejoice at the misfortunes of others, conscience permitting, and repeat the old proverb, "T'is an ill wind that blaws nae boddy guid." Blackberries should be picked directly into the baskets in which they are to be sold, and that very carefully, because it is very important to preserve the bright plump appearance of the berry to attract the buyer; pickers must also be cautioned against gathering immature half-red berries, for a few of these may lessen the value of a whole basket.

The blackberry has been marketed in various ways: the Indian squaw brings them to your door in a tin pail, or in a basket of her own manufacture; the small market gardener in various kinds of baskets in his waggon; and the larger grower ships them by rail to the city in great wooden crates holding fifty or sixty quarts. But the best package for the blackberry, that has yet been invented, is a basket crate, with a handle and cover, holding twenty-four strawberry baskets in three layers. This crate is so cheap that it need not be returned; indeed, the express charges on the lumber of the old fashioned crate nearly pays its cost. This neat clean package can be reshipped to any part of Canada, or sent to a private family with the fruit in a most presentable shape.

Nearly every town in Ontario will afford a market for the blackberry at a remunerative price. Hitherto the leading market for all choice fruits has been the city of Montreal, and to it the blackberry can be shipped in excellent condition from Western Ontario. But for all fruits, save those for exportation, Toronto is rapidly advancing to the front rank as a wholesale fruit market, and important distributing centre. During the last few years the wholesale fruit trade of that city has been rapidly increasing, until of late almost any quantity of fruit may be placed upon its markets without fear of overstocking it; not only because its citizens are learning to appreciate fruit in a way that would astonish the previous generation, but also, because small towns throughout Ontario are yearly learning more and more to depend upon Toronto for their supplies of fruit. Thus the prosperous city in which we are now, for the first time, holding our Winter meeting, and which already holds the proud eminence of being the first city of Ontario as an educational, political, and religious centre, is now also gaining in the esteem of an humble but not unimportant class of men, the Fruit Growers of Ontario.

COMPLIMENTARY RESOLUTION.

Mr. Beadle.—Now, sir, with your permission, I propose to introduce a resolution to this meeting with regard to a gentleman with whom we have been brought into contact, because of his occupying the position of Commissioner of Agriculture for the Province of

Ontario. I learn that he has decided to retire from public life—that he intends within a few days to leave the Department of Agriculture to some one else. Who that some one else will be has not yet been announced ; but I feel, from having had so much intercourse with Mr. Wood in his capacity of Commissioner of Agriculture, and from having noticed (as many others of our Society have also probably noticed,) the interest which he has taken in the work of this Association, the ready ear which he has always given to any representations which have been given by it, the readiness which he has manifested to carry out any suggestions coming from this Association which might point towards something that would be likely to promote the fruit-growing interests of this Province and develop its resources in that direction—I feel that all these call for some expression from us at this time, when he is about to retire into private life. I have no hesitation in bringing forward a resolution of this kind. It is not one which can be supposed to have any political bearing, but if anyone suspects anything of the sort on my part, I have only to announce to those who do not know my political leanings, that I am a Conservative, and that when it comes to voting I generally work on that side of the line. But, sir, I am not so strong a Conservative that I cannot appreciate zeal and interest for the welfare of this Province coming from either side of politics. I believe in giving credit to any man holding a public position, whatever may be his political opinions, and however they may differ from our own, who honestly and to the best of his ability endeavours to advance the interests of the country ; and I believe that Mr. Wood has done all that lay in his power, through the instrumentality of this Association, to develop the fruit-growing interests of this country, and also to lay the foundation of a forestry policy which shall eventuate in saving to this country the forests which are so fast disappearing, and in making them, what they should be, a continuous source of revenue to the Province. I therefore desire at this time to introduce this resolution :

"That this Association desires to express its high appreciation of the hearty support which has uniformly been given by the Hon. S. C. Wood, Commissioner of Agriculture, to every effort made by the Association to collect and disseminate information upon the subject of fruit-growing, forestry, etc. While regretting that he has concluded to resign the position in which he has so long and faithfully laboured, we sincerely hope that he will find that the change he proposes will conduce to his increased happiness and prosperity ; and that as an expression of the esteem in which his labours are held, we hereby tender him a life membership in this Association."

Mr. Drury.—Little need be added to what I consider the very proper remarks of the Secretary. It is, I think, a matter of regret to nearly every one, no matter (as the Secretary has said) what part in politics he may have taken in this country, that this Province is about to lose the services of the Hon. Mr. Wood. I think that this act on the part of the Association is an exceedingly appropriate and proper one. I think it will be the universal testimony of all classes of the people, that the Province of Ontario is about to be deprived, in the retirement of Mr. Wood, of the services of a gentleman who has been able to comprehend the interests with which he has had to deal, and who has always been ready to act in promoting them. It has been said that public men have to die before they can get their meed of praise, but I believe that we are all ready to give the present Commissioner of Agriculture his meed of praise now, and that upon his retirement into private life he will be followed by the good wishes of the people of this country generally, in recognition of the active interest which he has taken not only in promoting the objects this Association has in view, but also in everything having a tendency to advance the welfare of the Province agriculturally, ever since he has been in that position. I think that the Agricultural Commission and various other matters originated by Mr. Wood, which have contributed largely to the advancement of the interests of agriculture, will be kept in remembrance by the people of Ontario. I believe that we are all ready to say that this resolution expresses the sentiments of the Fruit Growers' Association, and re-echoes the feelings of the people of this country generally.

Professor Buckland.—Will you permit me to say a few words in reference to the pleasure that I individually feel in meeting with you upon this occassion, and especially the pleasure I feel in having an opportunity of endorsing—which I do with the greatest sincerity from a personal knowledge of its literal truth—everything that is stated in that resolution, and everything that has been said in submitting it, both by the mover and the seconder. We shall all regret the retirement of Mr. Wood from public life. I am sure that the observations which have been made as respresenting the sentiments of this society would be expressed with the same degree of cordiality, not only by all the various other organizations existing in this country in connection with horticulture, arboriculture, forestry, etc., but also by those which represent agriculture. I am sure that the Honourable Commissioner of Agriculture will retire from his duties with a well-earned claim to the confidence and the gratitude of his country.

The President.—Before putting the resolution I desire to add a word or two. It is perhaps not known to all of you that it is to Mr. Wood, and to Mr. Wood only, that the country is indebted for the grand display of fruit which we made at the Centennial Exhibition—a display which, I think, did more to bring Canada into notice than anything that the fruit growers, individually or collectively, ever attempted before. At the time when Mr. Wood took his position, our Association had been endeavouring to make arrangements for something of the sort, but we had failed, and it was only when he came into office, and met us in the liberal spirit in which he has always met us, that we were enabled to go on and make such a grand success as we did on that occasion. As most of you are aware, Canada carried off more medals in connection with the fruit exhibition at the Centennial than any State excepting, I think, Pennsylvania. I most heartily endorse everything that has been said in reference to the interest Mr. Wood has invariably manifested in horticulture, in forestry, and in all the departments of agriculture as well. As one of the Agricultural Commission I had the pleasure of working with him under his chairmanship for a year, and I must say I never met a gentleman who took a deeper interest in the work I had in hand than did Mr. Wood. As one of the directors of the Fruit Growers' Association I can say that every suggestion we have ever made to him has always been received in the most friendly spirit. We had only to show Mr. Wood that any measure we proposed was for the good of the country to obtain for it his heartiest support. I would propose that the motion be carried by a standing vote.

The motion was then put, and carried unanimously, the members standing.

The following paper by Mr. A. McD. Allan was then read :—

FARM EMBELLISHMENT.

By A. McD. Allan.

Embellishment, as well as a proper and convenient division into fields, is becoming a desirable point in the eye of the modern agriculturist when selecting a farm. A good deal too depends upon the location of the buildings and their surroundings in the way of orchard and garden, or ornamental trees. Passing along the public road the eye of taste is at once attracted by any neatness about farm-buildings and their surroundings, the fencing and planting and general front ornamentation.

There was a time when it mattered little, so far at all events as the value of the farm in the market was concerned, how the buildings were located, how the fields were divided, or whether or not a properly laid out fruit orchard and garden was there. But many modern farmers do not think lightly of these points ; they look carefully into all the advantages of soil, location, fencing and general embellishment. When erecting buildings the old time farmer looked alone at present convenience, nearness to the public road, and having dwelling and all other buildings as near each other as possible. Doubtless it may be convenient to erect the pigsty opposite the kitchen door so that all refuse can be conveniently cast in there ! If the stables and byres are close to the dwelling many steps are saved and much convenience experienced in feeding and otherwise attending to the stock ! It is labour-saving to have all the stock as near together as possible.

Many of our forefathers would call it pride in us to pay attention to decoration, symmetry, and order upon the farm! Children's whims! And yet we see on every hand how such whims pay; how eagerly a farm is sought after that has been laid out with taste—the dwelling surrounded by orchard and garden planted with choice fruits. What a pleasant sight when the traveller's eye rests upon a farm laid out in a square field, enclosed by wire fences, possibly the wire stapled into ornamental trees along the road front which take the place of posts. The dwelling nestled down comfortably among trees, the lawn and flower garden with the various shrubs and ornamental trees in front, and upon the other side early vegetable ground and orchard; an avenue leading from the public road to the dwelling. The barns, stables, and other necessary buildings located well to the rear, and protected for stock shelter by a spruce belt, which also forms a division between these buildings and the dwelling.

But as yet it is the exception rather than the rule to find advanced ideas on these points among farmers; they are almost all, however, open to conviction; and it is here that our Association has an important work to perform, especially in educating the rising generation to see these matters in their true colours, not alone for the sake of ornamentation, but also with a view to enhance the actual cash value of the estate, as well as to make the farm life more attractive and enjoyable.

As a rule the old-time farmer cared not to adopt anything that did not give regular crops of dollars and cents, and possibly this was one of the chief reasons why in times past so few cared to do anything towards decorating the farm and dwelling surroundings with trees, shrubs, and flowers. They saw no object in planting a tree or shrub that would not produce something marketable. And we cannot blame them in their conclusions, because they were brought up to think and believe just as they acted In educating the rising generation in these matters it is not by any means necessary that everyone should be a landscape gardener. It is enough that the importance of the subject is impressed fairly, and the great advantages to be gained both in personal comfort, satisfaction and financial gain brought clearly out. The general inclination is to advance no less among farmers than any other class in the community, and if our argument be sound and clear we will find the modern agriculturist ready to consider it and act with fairness. The cost of farm embellishment so far as tree-planting is concerned is merely the time and labour expended, and where there is a family of boys this item cannot be put at a high figure. Look at the results compared with the cost. What are they? The cash value of the farm is enhanced to at least ten times the actual cost of the improvements: the farmers' sons are better satisfied with a farmer's life when they experience the comforts of such a home, and the pleasures and new interests awakened. It is when these interests are awakened that we will find the agriculturist awarded his proper place among men. He will be no longer looked upon as a mere machine to plough and sow, and reap and mow, but a man of taste as well as scientific knowledge. We will not then see so many farmers' sons seeking other employment for the purpose of escaping a life of drudgery and dreariness, for they will find upon the farm subject for deep scientific study and research, elevating to the mind, deeply interesting, and profitable mentally and morally as well as financially.

BRANCH SOCIETIES.

A discussion on the question: "Is it Desirable to Encourage the Establishment of Branch or County Societies in Connection with our Association," was introdnced by the following paper read by Mr. Gott:

THE DESIRABILITY OF ESTABLISHING THEM AS AUXILIARIES TO OUR ASSOCIATION THROUGH THE COUNTIES OF THIS PROVINCE OF ONTARIO.

It is felt that the time has come when new and almost aggressive work must be done for the best interests of our Association. We feel that we have already long enough trod in exactly the old steps, and walked in well-beaten paths. There may be untasted

delights unexplored just beyond. As an esteemed friend of our Association writing me a few days ago said, among other good things: "It is time we made some effort to get out of our present methodical ways." This sentiment is shared in by your humble essayist. We know by our simple observation that all things around us are on the onward movement. Stillness and quiet does not belong, as an essential integral, to the business of earth. To promote their greatest possible usefulness, every organized being and institution of our times are stretching their utmost efforts to results. If, by travelling a few miles from home, we find we can accomplish more good and greater substantial results than by staying at home, we hesitate not to travel. If by increasing our effective force we find we can do more work and more profitably to ourselves, we at once increase our force. If, by giving better tillage and more thorough cultivation to our crops and our ground, we find we can make it pay in better returns, and better satisfaction all round, we cheerfully give the required labour. If, by working out of ourselves and apparently beyond ourselves, we find we can advance most surely our own personal enjoyments and prospects, we joyfully consent to so work. To keep up a healthy circulation in the body corporate, and to avoid the dread results of stagnation and rust, it is found necessary, for the proper expenditure of the great internal forces that engender within, that new territory must be acquired, and outside work must be undertaken. The Church, in her accumulation of benevolent power within her seeks new fields of activity outside, not merely because she could not expand herself at home, and perhaps profitably too, but also because she finds that in seeking to bless others she is also herself most blessed. Missionary fields are sought and missionaries are equiped and sent into them to make new conquests, and to manifest to all the depth and earnestness of her internal forces prompting her outward. Let this beautiful example of benevolence, as it is the highest and best of all examples, be a pattern for us to copy after, in our laudable efforts to spread the beautiful influence of horticulture in our land. If our work is worth anything it is worth a wide and general embrace. If it is so immensely beneficial to us it may also be immensely beneficial to many others. In a country such as ours, that is comparatively new and uncultivated in respect to the fine arts and fine living, the needs of a salutary horticultural influence are everywhere felt. The people look to us with longing eyes, and earnestly request that we teach them in the refining arts of horticulture. Shall we not lend a helping hand and thereby be the means of benefiting the many thousands who will rejoice in the opportunity?

In approaching this subject still more closely I need scarcely inform you that our present agricultural laws already provide for the formation of

HORTICULTURAL SOCIETIES

in towns and cities wherever fifty residents can be induced to join themselves together for this purpose. Their duties and their privileges are very similar to those of township agricultural societies, only relating to the interests of horticulture. This provision, however seems to us to be very inefficient to the accomplishment of the work that we have under contemplation. We would therefore propose that branch societies be formed, as in the preamble, as auxillaries of this Association in every county all over this entire country, with constitution and by-laws of their own, and for their own internal improvement and order. I have just received a copy of the constitution and by-laws used by the Michigan State Horticultural Society, for the management of their branches, of which they have several, and working very satisfactorily. As to the best way of organizing them, and the exact relationship they shall hold to us, are questions requiring considerable well-directed discussion. It would doubtless be well that they be requested to make their annual report to us of all proceedings and discussions in the year's work, and in time for publication in our Annual Report. There is no doubt at all in our minds that this plan could be so matured as to work very pleasantly both for us and also for them. The few preliminary questions that most require enlightened information as most effecting the main question are, "Is the country at present ready for such a measure, and would it be supported? What would be the effect upon our Association either in adding to or diminishing from its resources?" These, we think, could easily be settled by a little careful and friendly enquiry. And now, allow me to state as briefly as possible some few arguments in support of the main question,

ITS ADVANTAGES TO US.

1st. Our work would be better popularized through them. That is, by this means we could influence a greater number of people by having our representatives widely scattered among them. This is a very important and vital consideration, for little matter how good and gracious may be the nature of our work, if we cannot influence the masses it is comparatively a failure, as far as practical results are concerned.

2nd. By this means we would be enabled to introduce our work in places where we are at present little known. This, we think, is also a good point, and would count heavily in our favour. It frequently happens that the more needy a locality is of beneficial influence, the more slow and backward they are to secure them. How many of our remote counties would be glad of the opportunities we offer did they but know them.

3rd. They would become local representatives of the Association and its work. Through them, as through an agency, we would distribute our reports and circulate our literature, and make our wants and wishes known. Through them, also, we should receive our information of the wants and needs of the country and our memberships. Their very location and organization is a standing advertisement of our existence to the people of the section—a fact of immense benefit to us. Our present system of agency employments would thereby be rendered needless and void.

4th. By their local meetings and discussions they would be the means of preparing practical and interesting questions for our solution. They would also most effectively be the means of educating fine local talent to join us in our meetings for discussion. You can all see at a glance that this is a very important consideration, and would ultimately redound to our greatly enhanced usefulness. Who can properly estimate the capabilities of our well-trained local talent in this country?

5th. Through their means we should at all times have houses provided for the stated meetings of our Association. We should meet in this little town, or in that greater town, on the invitation of such and such a local branch society who had beforehand extended a candid invitation to us, being aware of the great advantages our meeting amongst them would be to them. This is as it should be, and this is the way it is done in other places, with fine mutual advantages.

6th. By means of these societies we might have the great advantages of the presence at our meetings of trained delegates, which they would gladly send for the occasion. We should thus at all times be sure of a good representative meeting, and thereby our discussions would be made more lively and interesting. This is a fine point and in our estimation the best of the lot, because with such fine ability and such excellent, stirring and practical questions, etc., added to our meetings, would make them just what they should be: "Educators of the people." But perhaps you will say: enough of this side of the question, what about

THE ADVANTAGES TO THEM?

1st. The society would become the home for the discussions of all local questions connected with horticulture in its widest extent, embracing questions in entomology and home decoration. To this bar all these questions could be brought at their regular meeting to be thoroughly ventilated and discussed. Do not we each of us know very forcibly the immense value of an opportunity like this? How many times in our daily practice do puzzling questions come up in connection with our work that we would be glad to have a chance to ventilate at the next horticultural meeting? How finely, too, would the practice teach them to become observers of nature, or, as Shakespere has beautifully put it: "To find tongues in trees; books in the running brooks; sermons in stones, and good in everything."

2nd. They would have advantages and pleasures of their own local training and the development of their own local talent. They could have the frequent enjoyment of their own local meetings and discussions, and in their own time and way. By this means a friendly familiarity and sociability among themselves would be best cultivated. This is of great advantage to any people. Where they become tired of their own talents they

could immediately secure others better than themselves to come and teach them new lessons to think of, and so the work would be pleasantly made to go on to notable and praiseworthy results.

3rd. They could have their own home exhibition of local products in fruits and in flowers, and by this means a friendly rivalry among themselves would greatly quicken their efforts at production, and the higest points of excellence would be attained. This would bring them more money in their pockets, beautify their homes, and greatly increase the pleasures of their natural lives. What gives to a man so much solid pleasure as to see his products always thriving and good; or to see his home decorated by industrious art; or to see his condition and surroundings bettering every year; or to see his wife always wearing the pleasant smile of contentment; and his family growing in intelligence and beauty around him?

4th. The honour of holding so close a relationship to a society so large and important and honourable as that of the "Provincial Horticultural Society for the Province of Ontario" would be such an incentive to work that much more would be done for their own advancement than by isolation. We all know how this principle acts in other matters, and it would be equally as operative here. The fraternal spirit in all our earthly relationships is found of great assistance to us in our work.

I have thus sought to lay before you as briefly as possible this very important question of our Association. I am deeply sensible of my utter inability to do it anything like a becoming or respectable justice. My deep anxiety for the best interests of the Association, therefore, can be my only apology for touching it at all. I am, further, fully aware that before it can be made practical some little friendly discussion upon it must be had. But I am satisfied that if it can be made a practical fact in this country "it is a consummation most devoutly to be wished," as Hamlet would say with respect to a very deeply interesting question. I think the subject will well repay for whatever enquiry may be brought to bear upon it for its friendly solution and advancement. We would much like to see our Association in our day like the sturdy and giant oak that has stood the fury of the storms for a century and still throws out its massive branches to the breezes, loaded with fruitfulness and foliage, and furnishing to the denizens of its own native forest not only the grateful shelter but also the strength-supplying food they require.

Hoping that something may be done while the question is yet warm,

I am, Gentlemen, very sincerely yours,

B. Gott,

Arkona, Ont.

Mr. Kitchen.—It occurs to me that this is a question of great importance with this Association. It is a question of great importance to the whole country. This Association has been in existence now for a good many years, and it has certainly been managed well. It has been in good hands, and it seems to have been well planted. It has attained a good, substantial growth, and has become well rooted in the Province. For my part, I see no reason why we should not have in every county a society in connection with this Provincial organization. It occurs to me that we might, in probably any county in the Province, get as good a meeting as we have here to-day. I see no difficulty in the way. I should be very glad to see "glorious old Norfolk" become a branch, and one of the principal branches, of this tree—this trunk, as you might call it—this Ontario Association. We have the trunk, and now let us have the branches.

Mr. Beadle.—This subject is new, very new. Mr. Gott has been out west instead of east, and he has come back chucked full of ideas, and he is flooding us with them. He has given us so much that it is going to take a good deal of time to digest it. I see from the silence of the members generally that they do not know exactly how to take hold of this. And I can sympathize with them; I do not know how to take hold of it. I want to take time to think over it. The movement is a new one. I do not exactly see what is to come from it. I suggest that this paper be left in the hands of the directors, and that we be allowed time to digest it and see if we can bring forward anything that is

likely to promote the interests of the Province in this direction—perhaps at the winter's meeting.

Mr. Wright.—I have not thought of this question much, but I might mention that in the Province of Quebec the Fruit Growers' Association at Abbotsford is a much more flourishing one than the Provincial Association. More plates of apples and more plates of grapes were shown at the exhibition of that local society at Abbotsford last fall than at the meeting of the parent society in Montreal.

Mr. Dempsey.—Several States of the union have adopted this principle, and I believe it is working satisfactorily in all of them. In those States where the principle has not been adopted the State associations have very few members—the majority of them are under one hundred. And yet I have to learn of any State association, even among those who have adopted this principle, with all their branches, that has as many members to-day as the Fruit Growers' Association of Ontario. I would be very much opposed to adopting this system without considering it thoroughly. In the first place, it would not be possible, it seems to me to form branch associations and expect to receive from the members of this association more than fifty cents each; and if we were to have only a hundred members, say, from a branch association in Toronto for instance, we certainly could not afford to give each member the *Horticulturist*, our report, and the plant. Then there is another difficulty which, it occurs to me, would arise. Taken Owen Sound for example. We have over two hundred members, I believe, in that town. Now, they have a horticultural society existing there too. If, then, we adopted this principle, should we not, instead of receiving one dollar per member for that two hundred members, be likely to find that they were members of the horticultural society and that we were only to receive fifty cents apiece from them. It seems to me that this plan would have the effect of reducing our funds, though it might increase our membership a little, and I am afraid it would not work satisfactorily. I think the proposition of our Secretary is a very wise one, that we should think and talk the matter over for a year, at the least, before deciding upon whether it is judicious to adopt such a change in our constitution or not.

Mr. Roy.—I have always looked upon the Horticultural Society of Owen Sound as a kind of auxiliary to the Fruit Growers' Association of Ontario, and I think the Horticultural Society of Owen Sound has done more good to this Association, and this Association has done more good to them, than if they had been part of this Association. This is a subject I have not thought much about, and, like the Secretary, I cannot see my way through it yet; but it seems to me that if we had horticultural societies throughout the country they would serve a good purpose for us.

Mr. Weld.—I think it would take some time to deliberate over this subject sufficiently to enable us to come to a conclusion as to what ought to be done. I would like to have it more fully ventilated. I would like to see the utility of this institution extended; but I am somewhat in doubt whether what is now proposed would result in that. A short time ago I was down in Montreal, and it appeared to me that their Horticultural Society has a more extended field than ours has. They give a large list of prizes, and have an exhibition of large collections of fruits and flowers both. I think this Society might extend its care to horticulture as well as fruit growing. Your perambulating system I think an admirable one. I think you require more strength, however, and I am afraid that the carrying out of the proposal which has been made here, would tend rather to weaken the Association than to strengthen it at the present time

The President.—It seems to me that there is a good deal in what Mr. Weld has said; and I think we might strengthen our Association by carrying out this idea to a certain extent. Suppose we sent a delegation from the Association to visit some of these societies at the time of their exhibitions, and called a meeting and had a discussion on the fruits or vegetables exhibited, and then brought our Association prominently before them. I think we might do a great deal of good for our Association in that way, by introducing it to the notice of societies in places where it is scarcely known at all. In the large fruit-growing districts along the lake shore from Port Stanley to Amherstburg we are now hardly known. Now, if a delegation could be sent occasionally to such sections it would awaken an interest in our society that would result in good to us and to the people visited. In this way there might be brought about something of co-operation between

the Fruit Growers' Association and the county associations without their interfering with each other's workings.

Mr. Doel.—Some places would perhaps be affected differently from others by the carrying out of this proposal. Before I saw that this paper was to be read some of us were talking about starting a fruit growers' association around Toronto; but the more I think of it the more difficult it seems for us to start such a society. Mr. Weld's speaking of acting with other associations, and of the annual exhibition of fruits and flowers in Montreal put me on a better track than any I could think of before, and that is this: We have in Toronto what we call the Toronto Electoral Division Society, which has an annual exhibition of fruits and flowers. Now, what is the difference between it and a branch of this Society? It appears to me that they are exactly the same, and that where there is such a society a union between them and this Society might be brought about. I think that where we could see our way to establishing these branch societies in the townships and smaller towns it would be a very good thing for us to do so. But we certainly could not give the magazine and these other things for fifty cents. A great many members of the Toronto Electoral Division Society are members of this Society as well.

Mr. Gott.—I feel sorry that the Secretary of the Michigan Society is not present with us, because I expected from him a full elucidation of this subject. It is a hobby with him. I also feel a little downcast because there are difficulties in connection with the question. I think we could accomplish more by adopting it than we possibly could without it. I know there are two or three questions to be settled. The first is as to whether the country is ready for what I propose. The second is, how far will it affect us financially! I wrote to the Secretary of one of the societies in the States lately asking him how this system was working, and he said it was doing very well on the whole, though not as well as they would like.

At this stage Mr. —. Laidlaw was introduced to the meeting, and invited the attention of the Association to the combined Dominion and Provincial Exhibition to be held this year in Halifax.

The Convention then adjourned until the next morning.

Upon the meeting being called to order the next day,

Mr. Reesor said: I wanted last evening to make a few remarks with reference to our branch societies. I am very strongly in favour of branch societies, and I was rather disappointed at the course the debate took yesterday. All the speakers seemed to throw cold water upon the proposition to establish such societies. One gentleman was afraid that the scheme would interfere with the dollars and cents of the Provincial Association. Another gentleman was afraid that it would interfere with the journal published by it. Now, it strikes me that the raising of these few hundred dollars and the publication of this journal are not the objects of this Association at all. Its object ought to be the encouragement of the growth of fruits throughout the Province; and it strikes me that that kind of argument is not to the point. Another gentleman, Mr. Weld, who I thought would support the proposition, also threw cold water upon it. I think the fears which have been expressed are all groundless. It strikes me that such local associations are just what would give strength to this central association. I am strongly of opinion that the branch associations would diffuse such knowledge throughout the country that they would prove to be a benefit to this Society rather than an injury to it. I think also that they would be a means of bringing reliable information to this Association. It seems to me that there is an impression abroad—there is in my county, at any rate, a very strong one—that this Society is a sort of family compact arrangement, or that it smacks a little of such an arrangement; that we come here from time to time to elect one another directors; that we are not representative men at all; that instead of this being a fruit-growers' association it is a nurserymen's association, and that it is conducted somewhat on the tickle-me-toby principle—you puff my wares and I will puff yours. I do not mean to say that there is any ground for such a suspicion; but its existence tends to destroy the confidence which the people of this country ought to have in this Association. One man is afraid that the associations already established would clash with our branch associations. Why, where there is an association established already, we do not need

to establish another; all we need to do is to get it to affiliate with this Association. My idea is that these branch associations should be established in all the ridings, and that then this association should be composed of representatives from the branch associations. We should see at our meetings delegates from all parts of the Province, who would have come prepared to give us reliable information with regard to fruit-growing in all their different localities. It strikes me that the majority of those present at this meeting come from localities in which the climate is influenced by the lakes, and they are not prepared to give information with regard to the more outlying districts. I think that if these local associations were established it would be better that the directors should not be elected here—that we should elect one another, but that the directors should be elected by the local associations, one delegate from each.

The PRESIDENT.—I must entirely dissent from some of the remarks that Mr. Reesor has made. In the first place, the Directors do not elect one another. The election of directors is carried on at a public meeting advertised over the whole Province. At that meeting a nominating committee of members is appointed, usually outside altogether of the Board of Directors, and these members bring in a report to the annual meeting of the names that they desire to submit for election. The law provides that we are to select a representative from among the residents in each of the agricultural districts, and this work the nominating committee does outside of the Board of Directors. This committee then brings in its report, and that report is acted on by the meeting. As to its being a family compact affair, it is as free from that as any society I have ever known. Then, as to its being composed of nurserymen, I am not a nurseryman, and I suppose I hold as prominent a position on the Board as anyone; and I know several others on the Board of Directors who are not nurserymen. There a great many difficulties about this question of branch associations, but it is to be referred to a committee to endeavour to carry out the proposition, and it will not be dollars and cents that will stand in the way of its being carried out, if it is found to be practicable in other respects.

MR. REESOR.—I merely mentioned that these ideas existed in the minds of the people. I did not offer them as facts, or offer them as my own opinion, because I have no opinion in the matter.

MR. ROY.—I may say that I have often been taken for a nurseryman, I suppose for the reason that I have taken a great deal of interest in fruit growers', horticultural and agricultural societies; but I have no pecuniary interest in fruit growing in any way.

MR. WELD.—Last night I met a gentleman here who is a representative farmer (Mr. Pierce), who came to get information in regard to fruit growing; and I think it would be well, now that we have one farmer amongst us, to hear what he has to say. It is the farmers you want to enlighten as to how to raise fruit.

MR. PIERCE.—I have read your publications for two or three years, and am anxious that something may be done in our neighbourhood. We have a good fruit growing section, and all we want is to have the people wakened up to their own interest. I do not understand the working of these societies at all; but I thought that if we could get some gentleman of talent from this Board to come up and give us a lecture or two in these counties along the lake shore, we might be able to get an interest stirred up among the farmers there. I suggested to Mr. Weld that I thought we might hold meetings of our own like this, in our own county. I meant to say that we could all be members of this society, and also have a society of our own, so that we should be benefited ourselves, and at the same time strengthen your hands.

MR. ARTHUR REEVES.—This Association is not enough known among the people. Yesterday before I came here I was talking with some gentlemen, and I asked them if they did not belong to this Association. They said "No; we did not know anything about it." One of them was Mr. Scadding, manager of the Bank in Orillia, who takes a great deal of interest in fruit growing. I think there might be a great deal more done if people outside would take a little more interest in it, and go round and solicit subscriptions to the paper and to membership. Go through nearly any of these cold counties, and nearly everywhere you will hear complaints that the trees have rotted. The reason for this is that the people have not bought the trees which were suitable for the climate.

The PRESIDENT.—To show that the Association is held in good repute and that

efforts are being made in this direction, I will just mention that our membership was increased about eight hundred last year by the efforts of members in various districts in canvassing in this way, and that it promises to be increased very much more in the year we have just entered upon.

Mr. Hopkins.—The remarks that have just come from the chair have struck me as being something practical. I come from the county of Halton. I do not know how the electoral divisions are arranged, or how the directors are appointed; but so far as Halton is concerned I am not aware that we have a representative there at all. I have lived in the county of Halton twenty-five years, and I have never had a member of this Association call upon me yet. This is the first time that I have met with you. The way that I came to be a member was that I just enclosed my subscription and name to the Secretary at St. Catharines. It strikes me that the county of Halton should have a representative. Perhaps it has one; but if it has I am not aware of it.

The President.—That is district number seven. To represent that district, W. H. Mills, of Hamilton, was elected at the annual meeting. When notified of his election, he declined to serve, and the Association has no power to fill the vacancy. The Association is at present in communication with the Commissioner of Agriculture on the subject, however, and expect to have it filled.

FORESTRY.

The meeting then took up three items on the programme, and discussed them together, viz.:—"The best method of awakening a general interest in Practical Forestry," "The best varieties of Forest Trees to Plant for ornament and for profit," and "How can we induce farmers to Plant Trees along the Roadside?"

Mr. Gott.—This is a subject that is growing in interest from year to year. I will confine myself to the question, what varieties of forest trees are best for general planting; and the first variety I might mention is Maple. I believe the trees of that variety command the respect of not only Canadians, but of all people among whom they are known. Our Sugar Maple is one of the most beautiful trees that can be produced in any country. It is a tree that has so many uses and so much ornament about it that wherever we see it we have infused into our minds a genuine love for our country. The Soft Maple is also a very beautiful tree. It grows very symmetrical, is very ornamental where it is cultivated for ornamental purposes, and in every way fulfils the expectations of the planter. The American Elm is, I think, one of the most graceful trees that we can have planted on our streets, simply on account of its pendulous habit of branching. The Basswood is also a very beautiful tree for ornamental planting; and I often think that if we would take our Basswood tree and our Tulip tree, and bestow upon them the same attention that we sometimes do on exotics, they would repay us better for it. The Basswood tree is said to be one of the best honey-producing trees in the country. The Tulip tree is also a very handsome tree. It is a tree that will reward any amount of care and attention. It grows very symmetrical; the leaf is very large and showy, and in every way the tree is ornamental and beautiful, but more especially so when it shows its beautiful blossoms. The man who sees it once and learns that it is a native tree will certainly be inspired with a deeper love for the country. The nut trees are very valuable, the Chestnut, the White Walnut and the Black Walnut. Amongst our evergreens the Canada Balsam is one of the finest and most beautiful. It would be almost impossible to import a tree that would surpass it in beauty. Our pines are also very interesting. We have several of them in our country. If they are taken early and planted in our lanes, they soon assume fine proportions, and become very ornamental trees. The Black Spruce, taken and cared for, I think fully equal, if not superior to the Norway Spruce of Europe. I saw a specimen of this tree on the ground of Mr. Arnold last winter, which struck me at once in a manner which I shall never forget. These are the principal forest trees that I think are interesting to us.

Mr. Reesor.—I have a large number of Basswoods in my grounds, and I prize them

higher than any deciduous trees I have growing, although I have several varieties. The Chestnut and the two kinds of Walnut the gentleman recommends, will not grow at all in the locality in which I reside (in the centre of Victoria County), although that is one of the best agricultural districts in the province. I believe a few Black Walnuts, in sheltered positions, have been brought to maturity; but no Chestnuts will grow. I entirely dissent from what Mr. Gott says with regard to the Canada Balsam. I think it is the most worthless of all the evergreens, the most unsatisfactory, the shortest lived. That has been my experience of it, and I live in a county in which it flourishes naturally. When we come to plant it as an ornamental tree it takes sick and dies just as it has got to such a height that it is beginning to be interesting.

Mr. Gott.—There must be something wrong in the environment.

Mr. Reesor.—I am sorry Mr. Gott did not make mention of two trees I admire very much, the White Pine and especially the Norway Pine. I think the Norway Pine is one the most beautiful that can be planted.

Mr. Leslie.—That Norway Pine is what is known as the Red Pine.

Mr. Slight.—The remark that the previous speaker has made about the Canada Balsam fully expressed my experience. I have no doubt that in some parts of Canada it succeeds very well, but in the northern country it does not. I have noticed that just as soon as the trees around it have been thinned out by persons desiring to preserve it, and just when it has attained a fine symmetrical growth and a good size, it begins to decay. From what I have gathered as to the easiness of transplanting and the success which attends it in growing, I have come to the conclusion, that the best native evergreen we have, is the White Spruce. It is a perfectly healthy tree. I have never yet known a White Spruce to show any signs of decay from age, where it has had anything like fair play. Its wood is one of our most valuable timbers for certain classes of work; in boat-building especially it is invaluable. From what I know of it I would recommend it as the best tree to plant by roadsides. A timber which I see the architects are seeking after very much is the Butternut; and in the northren part of the country the tree succeeds very well.

The President.—Mr. Gott mentioned the Butternut under the name of White Walnut.

Mr. Arnold.—I have to endorse the sentiment of this gentleman with regard to our Canadian Balsam. It is a beautiful tree in its native swamp, and if we could transplant it into a swamp again, or to some place where it would have a spring about it to keep it moist, it would stand; but if we attempt to transplant it to high ground, just as soon as it gets to be about ten or fifteen feet high, just when it begins to become beautiful, it begins to die. I hope we shall not get the Black Spruce and the White Spruce mixed. I find that there is a great deal of confusion in regard to those two spruces. I have them both, but really I do not know which is the black and which is the white. The spruce that Mr. Gott alluded to as growing upon my place, I believe to be the Black Spruce, but I am not positive. The Black Spruce, if that is it that I have, spreads out more at the bottom than the White, and I would consider that it has a blue shade to it. It is one of the prettiest trees we have, either native or foreign. I have challenged the whole county, and I might almost go further and challenge the whole Province, to produce as fine a tree as my Black Spruce, that I got out of a swamp. The Magnolia is perfectly hardy, and the old Austrian Pine is one of the finest trees in the country. I feel like planting Walnuts all over my place, and I think if I had a hundred acre farm I would plant them in every fence corner—not for their beauty, but because they would pay. The Basswood succeeds well in our section. The Walnut does well throughout the greater part of the country.

Mr. Roy.—I can confirm what Mr. Arnold says about the White Spruce, and the Austrian, and the Norway Spruce. I have both Norway and Black Spruce upon my place, and when they have room to grow and begin to grow from the ground, I find that the Black Spruce is the more ornamental of the two. One fault that the Norway Spruce has, is, that it goes away up too high and then gets bare at the top; but the Black Spruce always remains a beautiful tree, and, as Mr. Arnold says, it has a blue tinge. The Austrian Pine is one of the most beautiful of trees until it gets old. As to the Balsam, I

find what Mr. Arnold speaks of; after you have had it removed three or four years you will find a branch here and there through the tree dead; but when it is young it a very beautiful tree. I think every farmer ought to plant the Black Walnut and the White Walnut. The Black Walnut is not only a very beautiful tree, but it is going to be a very valuable tree also. I do not know but what you will get from $80.00 to $100.00 a thousand feet for Black Walnut now. Our country is being denuded of it. The Ash is also a valuable tree; it is now brought greatly into use in making railway cars and various other things.

Mr. Arnold.—Americans have come over from Michigan and paid as high as $6.00 to $8.00 a stump for old Walnut stumps along the Grand River; and they have taken them over to Michigan and made them into furniture, which they have brought back to us and sent to Europe.

Mr. Roy.—I planted about fifteen or eighteen Walnut trees some nine or ten years ago—the nuts; and before I came away I went out to get the size of them, and they measured eight or ten inches in diameter.

A Member.—What is the difference in the growth of the Black Spruce and the Norway Spruce, the same time planted?

Mr. Roy.—I suppose they will remain at about the same altitude until they get to be about twelve or fifteen years old, and then the Norway Spruce will begin to grow up past the other.

Mr. A. M. Smith.—There is one tree of considerable importance in our section that has not been mentioned yet, that is, the Common Poplar. Our Pulp Mills in the vicinity of St. Catharines are paying from $7.00 to $8.00 a cord for this wood, for the purpose of manufacturing pulp for paper out of it, and it is a tree that I think will grow in any part of the province, and very rapidly too. I think our common White Cedar has not been mentioned either. For a shelter belt or ornamental hedge even, it is not surpassed by any of our native trees. My experience in regard to the Balsam, is very similar to that of the others who have spoken of it. It is a good deal like some of the human species; it is very promising when young, but as it grows up it sometimes goes to the bad for want of water.

Mr. Bucke.—I think the best way we can interest the farmers in practical forestry, is by showing them that there is money in it. There appears to be a general opinion abroad that the Black Walnut will not grow except in certain favoured regions; but anybody who has read Mr. Joly's very able paper on forestry, will see that he is very successful in growing it below Quebec; and if it will grow below Quebec, it will certainly grow in any part of Ontario.

Mr. Wright.—Mr. Joly's residence is between Montreal and Quebec, at Lotbiniere.

Mr. Bucke.—Well, below Montreal at any rate; and if they grow below Montreal they ought to grow in any place in Ontario. Owing to the scarcity of the Black Walnut, the Butternut is now being used for it, stained and varnished, and it looks so much like Black Walnut when it is made up that you can hardly tell the difference.

Mr. Roy.—Have you seen the Black Walnut growing in Ottawa?

Mr. Bucke.—I have specimens growing at my place that are three years old. The Tulip is a very handsome tree. The Georgetown Mills on the Grand Trunk use half Basswood and half rags for pulp for paper. I am told the Basswood is running short; it is a very free-growing tree and can be easily cultivated, and where paper works are established I am sure it would pay the farmers to go in and cultivate it, especially on any broken ground they may happen to have; it is worth about $4.00 or $5.00 a cord at paper works. The main difficulty in the way of planting trees along the roadside, is the unfortunate fashion they have here of allowing cattle to run at large. I do not see how you can very well protect trees along the roadside as long as cattle run at large. There ought to be some Act of the Legislature, if there is not one at present, to restrain cattle.

Mr. Roy.—There is an Act.

Mr. Bucke.—Cattle should be fenced in, so that farmers would not be put to the expense of protecting trees.

Mr. Roy.—The townships have the power to make by-laws to restrain cattle from running at large.

Mr. Bucke.—They have the power, but unfortunately the widow's cow has such an influence with the representatives of the people in the councils, that they do not like to enforce the law. I have not heard anything said about the Hickory. I think it is one of the most useful trees we have for making spokes, and handles for spades, forks and axes. Unfortunately it is a hard tree to grow, it does not transplant very well; but I think if the nuts were secured and planted where it was intended the trees should grow, the Hickory could be made a success as well as any other tree. Hickory sells at a very high price. It grows very largely along the St. Clair River. The Cut-leaf Birch is a beautiful tree to grow for lawns and places of that sort, but it is not a native tree.

A Member.—I should like to ask if any member present has any knowledge of the Catalpa.

Mr. Bucke.—It has been grown at Sarnia. It is not hardy.

Col. McGill.—I would like to ask the gentleman who spoke of our American cousins coming over and paying such high prices for Black Walnut stumps if he knew what they turned them into.

Mr. Arnold.—They make them into veneer.

Mr. Bucke.—They also make gun stocks out of them.

Col. McGill.—Not of the stumps; they are not long enough.

Mr. A. M. Smith.—A question was asked with regard to the Catalpa. At Grimsby it stands the winter very well. A tree I planted there some five years ago is growing very well.

Mr. Gilchrist.—I saw a Catalpa planted in Huron this year growing very well.

Mr. Wright.—Along the sides of roads in our part of the country they principally plant Hard Maples, and some of them plant the Soft Maple. The Soft Maple does not, of course, stand the winter nearly so well as the Hard Maple. The Basswood is grown very largely, because, when it is planted along the roadside and has a chance to spread its limbs, you would hardly recognize it from having seen it only in the forest. Some of them are to be seen in Quebec about the old English cathedral. Apart from their appearance they make excellent bee pasture, and in northern counties where we have not the same abundance of flowers that you have here, that becomes a matter of considerable importance to us. Another tree that we are planting considerably in our locality is the Red River Maple. It grows very well with us. A man who was out in Manitoba four years ago brought four little trees home from there, and now you would be surprised to see the size they have grown to. Last fall he showed me some specimens already six feet high that he had grown from the seed from those Red River Maples. With reference to evergreens, the tree which we have found do the best with us is the Norway Spruce. The Canada Balsam does very well, but when it grows up to a certain height the top is easily broken off by the wind. Cedars, of course, do very well with us. They make a fine wind-break, and look very well, too. With reference to the way to induce people to plant trees along the highways, in their gardens, and so forth, I have found that the best plan of all is to set a really good example for them to follow. After having set out trees myself I have noticed that a great many have come to me and asked me how much it cost; and when they found how little it cost they have gone to work and planted trees themselves. I am a school trustee, and as such I have induced the Board to plant trees all around our public school, and that has served as a good example. which has been followed by a good many people.

Mr. Gilchrist.—There was some seed of the Red River Maple sent to me two years ago. It is a beautiful tree and grows very fast. The leaves have a purplish tinge.

The President.—The trouble with that tree is that it does not grow to any size. It is not more than a large bush, or a small tree at any rate. For forestry purposes it would scarcely be desirable where other more valuable trees would grow. Rev. Dr. Wild is in the room, and we know that he takes a great interest in tree planting. We would like to have a word from him.

Rev. Dr. Wild said that as a minster he was somewhat interested in trees. He believed they were a regulator of climate, and that they were a great advantage to us in many things. He had perhaps five thousand trees. Three thousand of them were good bearing apple trees, a few hundreds of them were pears, and a few hundreds of them

plums and peaches. Besides these he had a good grapery. This was work enough for a minister, and a minister always lost money in farming—one could not do more than one thing at a time he supposed. He had on his farm nearly every kind of nut tree that would grow in Canada, so that he could grow all his own nuts. He was very much interested in what this Society was doing. If he ever retired from the ministry it was his great desire to turn his attention more fully to planting trees. He believed that was a thing we had to come to in Canada. The great destruction of our forests was making a very great change in our climate. We had almost destroyed our spring and our autumn. In fact, he thought that, if we continued as we are doing now, we should at length have but two seasons—that is, winter and summer. The streams were drying up too. If we could have a law which would induce farmers to plant trees along the sides of the road and other places it would make a great difference in our grains and fruits. On his place he had a half circle of pine trees, which just left his orchard open to the sun, and there he was able to grow peaches—what none of his neighbours could do.

The President.—Will Dr. Wild tell us where his place is?

Dr. Wild.—It is at Bronte. I suppose my orchard is just about forty acres in extent, and yet towards the lower end of it I will suffer from the wind. The small peaches that I planted out there were killed last spring, but those up nearer this grove are living. The trees are small, thin ones; yet the shelter is some advantage to them. I read as carefully on anything of this kind as I do on the current ideas of theology. I thank you for your invitation. I am glad to see you, and wish you great success.

Mr. Page.—I fully agree with the remarks of the gentlemen who have preceded me, not only with regard to the way in which tree planting may be made to beautify the country and with regard to the value of trees in respect of their timber, but also with reference to the influence which trees have, as Dr. Wild has pointed out, on the climate and rainfall of the country. I have been pleased to hear the remarks which have been made to-day on the subject, and hope that what has been said may go out through the country and stir up among the people an interest in the planting of trees. Every man who owns the ground to put a tree upon should make it a point to plant at least one tree of some kind. We have very many native trees of importance in this country. We have no lack of trees for planting. The speakers before me either have forgotten or are not at present acquainted with the fact that our Legislatures have taken measures in this last Session to encourage the planting of trees.

Mr. Dempsey.—In a certain section of the country I know a very nice grove or belt of trees that is growing along the roadside, composed of pines, oaks, grey walnuts and some other vatieties that have attained a size sufficient for saw-logs; and these trees, it occurs to me, have a worse enemy than the animals that run on the highway, for the Municipal Council has offered those trees for sale. Now, the attention of our legislators should, I think, be drawn to cases of this kind. Those trees happen to stand just within the bounds of the highway, and really they are beautiful. I pass them as often as twelve times a week—sometimes more than that—and I am very sorry that they should be offered for sale. I do not feel able to buy them to leave them standing—I do not know that I should be expected to do so; but I should like to see this thing prohibited if possible. Only a year ago there was a nice little belt of pines that had not got sufficiently large to make timber of, but which would make cordwood, was sold, and those trees were chopped up into cordwood and taken away. I think if our Legislature would impose a penalty of not less than ten dollars and not more than one hundred dollars, or something like that, upon any person found injuring or cutting a tree along the roadside, it might put a stop to this kind of thing. With respect to varieties to plant for profit, I do not know of any variety that occurs to me that would be so profitable as the Black Walnut. Some say they are tender in a great part of the country; bnt in our county of Prince Edward, which is certainly a severe climate, I know of one Walnut tree that would make two standard saw-logs, and it has only been one generation growing. I know of another that has attained the size of one of those pillars there. I fancy that any variety of tree that could be planted would eventually prove remunerative. The Butternut, or Grey Walnut, grows very rapidly. We find it growing very far north, and it runs up and makes very pretty lumber. I believe it is anxiously sought for, and that it takes

the place largely of the Black Walnut. I would prefer Black Walnut where it will grow, and I believe it will grow over nearly the whole of our Province.

Mr. Wright.—The Butternut grows well in our locality; but I have never been able to transplant it and have it live.

Mr. Bucke.—I have transplanted it when small after growing it from seed.

A Member.—I have found no difficulty in transplanting it.

Mr. Bucke.—I am told there are trees of the *Acer Negundo* of a large size growing on the banks of the Don. Mr. Saunders said it was only a large shrub.

The President.—Perhaps I should qualify that. They will grow probably thirty feet high.

Mr. Bucke.—They are very rapidly-growing trees.

A Member.—Is there any other name for it?

Mr. Bucke.—The Red River Maple or the Ash-leaved Maple. I think we are blaming the want of forests a good deal for the drying up of our streams, when the fact is that it is owing greatly to the swamps being cleared up.

Mr. Drury.—I am sorry I did not have this meeting furnished with a copy of Mr. Wood's Act with reference to the planting of trees. If the late President of this Association had seen it he would have observed that the difficulty he speaks of has been overcome by a clause in the Act. Any man injuring a tree—even the Municipal Council—can now be proceeded against and fined. We have talked a good deal about tree planting in the past; but it is with this as it is with other things—unless you have a little money to make it go it will not go. The Act provides that the trees be set thirty feet apart. An expenditure of $500 by a Municipal Council will plant 5,000 trees, and those planted thirty feet apart will extend for a distance of thirty miles, so that by an expenditure of $500 you can have a beautiful avenue of fifteen miles of trees. I have seen it once in my life—I forget just where—miles and miles of highway planted systematically just as this Act contemplates that trees should be planted. I have no doubt that there are here to-day gentlemen of influence in the various municipalities; there may be, and doubtless are, some who are representative men, and I do hope and sincerely believe that before another year has passed around, action will be taken in many municipalities to secure the carrying out of the aims and purposes of the Act which has lately been passed by the Legislature. I am quite satisfied that if it is found to be a success in one municipality, the people all over the Province will speedily demand that their municipalities go into tree planting also; and that if they do, the value of their property will thereby be enhanced many millions of dollars in the estimation of those who are able to judge as to what gives value to a country.

Mr. Leslie.—There has been an Ontario Act for several years protecting trees planted upon public highways. It gives the people the right of property in those trees, and those who plant them cannot remove them, and no council can remove them, without giving something like two months notice. In the present Act there is just one thing I would like to see altered, and that is with regard to trees planted along the boundary lines between farms. The distance now from the boundary line is six feet, and a man planting six feet six inches from the boundary line would get nothing. And if a man planted two rows of trees, he would get nothing for the second row.

Mr. Drury.—That was to prevent the road being kept too wet.

Mr. Slight.—I have often been pained to see the way in which the telegraph companies deal with trees, and I never was more so than one time that I was driving near Barrie. There was once a beautiful belt of pines there, which I much admired; but the telegraph companies have come along there and utterly destroyed it by cutting it in a disgraceful way. They might have taken out branches which would interfere with their wires; but instead of that they have gone and completely destroyed trees without any necessity. I would make this motion:—

Mr. Slight moved, seconded by Mr. Page, "That the Fruit Growers' Association protest strongly against the reckless way in which the telegraph companies unnecessarily destroy trees on streets in towns and on the country roads; and that we would ask them to exercise all possible care in cutting off branches of trees, and that a copy of this reso-

lution be sent by the Secretary to the telegraph companies, and that the Dominion Government be memorialized on behalf of the resolution." This was carried.

Mr. Hopkins.—I wish Mr. Slight would insert in that resolution a request to the Municipal Councils, that they pass by-laws preventing cattle running on the road side. If this is not done there is little use in our planting trees.

Mr. Roy.—I hope the time is not far distant when fences will be done away with universally. I was down in the Eastern States this summer, and I saw miles and miles without a fence at all. There were strawberry beds and beds of various vegetables along the side of the roads, without any fence to protect them, and no harm came to them.

The President.—I believe the telegraph companies operate under their charters, which are obtained from the Dominion Government, and it might be well for this Association to memorialize the Dominion Government on the subject. I suppose that a Dominion Act will over-ride any Provincial Act, and I do not suppose that we have power to interfere with the telegraph companies legally.

Mr. Beall.—I would like to remove the impression, which it seems to me is an erroneous one, respecting the effects of the roadside planting of trees upon the road itself. The idea generally prevails that if trees are planted along the roadside, they will keep the road muddy longer than they would otherwise remain so, especially when the trees get up so that they will shade the road. Now, I believe it is proved beyond any doubt, by the highest scientific authority we have, that trees so planted actually dry the road by absorbing the moisture from below them. There are many instances on record of swamps having been dried up by the action of trees. There is one instance of a lake three feet deep having been entirely drained by means of trees which immediately surrounded it.

Mr. Reesor.—I think that trees dry the road in dry weather, but not in wet weather. How does Mr. Beall account for this fact, that when you are driving through the woods you will come on a foot of snow in it, while outside the dust will be flying?

Mr. Beall.—I am not speaking of the inside of a bush. Mr. Reesor knows very well that the wind is the principal cause of evaporation, and that where the wind can have full sweep upon a roadway, the result will be just what I have stated. In the woods it is different. There the wind has no chance whatever to dry up the moisture.

NEW FRUITS.

The following Report was submitted by the Committee on New Fruits :—

Mr. President and Gentlemen of the Fruit Growers' Association of Ontario:

The year 1882 has been unproductive of many new fruits of value, therefore the Report will necessarily be short, and taken up principally with a review of fruits already mentioned.

We shall try to avoid lengthening the Report with those varieties which are not already before the public, and have no especial merits to recommend them.

STRAWBERRIES.

Early Canada.—Having done so well in the year 1881, giving large crops of fruit, of fair quality, realizing large profits to the growers, has this year very much disappointed us ; quality being poor, and we shall test it another season before recommending either or the garden or market. In the meantime we shall give the first place to the Dunca for earliness.

Warren.—Flavour, good to very good ; very firm and an excellent shipper.

The Bidwell.—Introduced in 1880, is destined to have a short life. Like most varieties giving enormous yields, has imperfect blossoms, and is something like Triomphe de Gand.

very disappointing, giving only one or two fair pickings. We think, however, that with the hill system and high cultivation, it may prove more successful.

Arnold's Bright Ida.—Strong grower. One grower considers it the strongest of any of the new varieties.

Manchester.—Also pistilate or imperfect blossom, and is perhaps the most valuable of all the sorts to the fruit grower for market, as a medium berry both in season and quality, otherwise combining more good points than any berry thoroughly tested. The most vigorous in growth; foliage large of dark green colour, and apparently will withstand the effects of the sun and drought equal to any; fruit stalks very strong, holding the fruit well up from the ground. Fruit larger, of better quality and more productive than the Wilson; also fully equal in shipping qualities to that well-known berry.

Arnold's Maggie.—One grower claims this the earliest of any of the new berries; that it is productive, with quality fair.

Jas. Vick.—The latest introduction, so far only tested on the grounds of the introducers, Chas. A. Green, and a few others. The merits claimed for this by Mr. Green are as follows, and which are endorsed by the following gentlemen, who visited the grounds while the Jas. Vick was ripening, W. B. Barry, P. C. Reynolds, Vick Bros., John Charlton, Peter B. Mead, Geo. A. Stone and Geo. S. Wales:

(1) Fine quality, unusual vigour, and hermaphrodite (or perfect) blossoms.

(2) Colour, form and firmness of berry, which approach the ideal. No white tips, no coxcombs.

(3) Ability to stand on the vines a week after ripening, without becoming soft, or rotting, or losing quality or much lustre. Instead of softening it shrinks a trifle, and becomes firmer than when first ripe.

(4) Uniformly large size, and productiveness unequalled by any other variety. Two hundred and eighty berries were counted on one average plant, and from one row about 100 feet long nearly two bushels of berries were gathered.

Arnold's Alpha.—Small, strong grower, but quality good; so says one good grower.

Jersey Queen.—Not productive as a cropper, otherwise combines many good points as a late berry.

Arnold's Pride.—The largest berry of any of Arnold's, and most promising.

RASPBERRIES.

Shaffer's Colossal.—Supposed to be a cross between the red and the black-cap varieties; colour, red, when first ripe, turning to purple, and, as its name implies, is colossal in berry as well as plant; hardy, and one of the most productive for the medium-to-late season. Although a little too soft for distant markets, we think it worthy of a trial by all.

Hansell.—First introduced in the fall of 1882, and so far, only tested on the grounds of the originator, the late James S. Hansell, Burlington County, New Jersey, where it has been highly recommended by a meeting of fruit growers of that State, for earliness, good colour, and shipping qualities. This variety not being tested so far north as Canada, we are unable to determine how it will behave with us.

Lost Rubies.—In this variety we have one to replace the old Franconia, the fruit being similar, of the same season, and, if anything, more productive; great vigour of growth, and second only to the Turner in hardiness. The only objection being that it is partially pistilate, or imperfect blossom, which objection may be overcome by planting every third or fourth row with Cuthbert.

The Souhegan.—Whenever tried has become the most popular for earliness, hardiness, and productiveness of all the black-cap varieties.

BLACKBERRIES.

Gainor.—A Canada seedling, originating on the farm of Jacob Gainor, in Thorold township. The seed of this is supposed to have been dropped by a bird in a strawberry patch, where it grew in the year 1878. The following season, although but a small plant of about eighteen inches in height, it was covered with large, fine fruit, and has been loaded every year since, and the plants have now become fully established. It has shown itself a strong grower and very hardy, not being injured in the least by the severe winter of 1880-81. The soil being a moist loam, together with the hard seasons it has passed through without injury, establishes beyond a doubt its hardiness in the section where it originated. In size, the berry has averaged one inch in length, by seven-eighths of an inch in breadth; quality of the best.

CURRANTS.

Black Champion.—First sent out in England in the autumn of 1882. The following report of it appears in the *Garden* (English): "A first-class certificate was awarded by the Royal Horticultural Society for Currants to Black Champion, the finest of the varieties hitherto known, it being extremely prolific, the berries being large and ripening simultaneously in the same cluster. It is a fine acquisition among new fruits, and one that will be especially valuable for market-growers on account of its extreme fruitfulness." This variety will shortly be introduced in this Province, and we will be able to report in a year or two if it is likely to be of value here.

Fay's Prolific.—Has been sold the past season for the first time, and likely to be quite an acquisition, being nearly as large as the cherry, and enormously productive.

Moore's Ruby.—Another new red currant of great promise, being a cross between the Cherry and White Grape, retaining the mild flavour and productiveness of the White Grape. Lacking the acidity of the other red currants, and needing less sugar for cooking purposes, will make it the leading variety for family use. It is agreeble to eat out of hand.

GOOSEBERRIES.

Large Golden Prolific.—This fine new seedling may be a decided acquisition to the small list of hardy, mildew-proof gooseberries. The variety is a remarkably strong, vigorous, and upright grower, with dark green glaucous foliage, which resists mildew perfectly, and persistently hangs on until the end of the season in New York State. The fruit is of the largest size, oblong—good samples measuring one and three-fourth inches in length. Colour, golden yellow, flavour decidedly good; very productive.

GRAPES.

The greatest interest among fruit-growers is now centered on the grape, and perhaps the greatest results are being attained in this fruit with new and improved varieties.

The new white varieties are mostly proving hardy, productive and healthy, and should the same rate of improvement in out-door grapes continue for a few years, we shall be spared the expense of growing grapes under glass.

Lady Washington.—Has developed a tendency to overbear, and lateness of ripening; will require another season's trial, to determine the value of this variety for Canada.

Prentiss.—Is being extensively planted, and its high flavour, productiveness, and keeping qualities will insure it a leading place as a vineyard grape.

Empire State.—Very early; the best of Mr. Rickett's seedlings. A cross between the Hartford and Clinton; growth this season in Canada appears perfectly healthy and free from mildew. George W. Campbell, of Delaware, Ohio, originator of the Delaware and other grapes, says of it: "A very handsome and promising grape, and excellent quality." H. E. Hooker, ex-President of New York State Horticultural Society, pro-

nounces it: "The best of all white grapes." Bush, Son and Meissner: "It shows characteristics of both parents in foliage. The best white grape yet brought before the public."

Purity.—White; has many desirable qualities for the amateur; not sufficiently tested to pronounce on it as a grape for the vineyard. It is a strong grower, hardy, not inclined to mildew. In quality or flavour, scarcely leaves anything to be desired. Clusters small, averaging smaller than Delaware; berries a little larger than that variety; very early, ripening the latter part of August. It is quite difficult to propagate, and the vines likely on this account to remain scarce.

Jessica.—A small white grape, of Canadian origin; highest quality, sweet, sprightly, and pure flavour; very early. Highly recommended for planting in the garden, and may prove profitable as a vineyard grape. D. W. Beadle, the disseminator of the Jessica, says: "The vine is perfectly hardy in our climate, free from disease, and enormously productive. A vineyard of about 200 vines, in bearing for some time, has never failed to yield a heavy crop. The fruit sells at the highest price, and brought this past season, at wholesale, $400 per ton.

Dempsey's No. 25.—Proving a strong grower, and hardy, slightly subject to mildew, but not as much so as many of the Rogers' Hybrids. Too late in ripening for planting north of the line of Grand Trunk, but valuable as a late white grape, particularly so in the Niagara District.

Golden Pocklington.—The reports on this grape are generally most favourable. Although last season was unfavourable to early ripening, it ripened well at Brampton, Montreal, and different points in the Niagara district. Mr. A. McD. Allan, of Goderich, however, says it did not ripen at all in his section—this being the only unfavourable report given. In size and appearance the Pocklington leads all the white grapes, and the general opinion seems to be that it has taken its place as a standard variety.

Niagara.—Mr. Allan, of Goderich, reports the vine has made a strong growth on his grounds. It was the last vine to shed its foliage with him.

Amber Queen.—Amber colour; hybrid, between black Hamburg and Marion. Commences to ripen the latter part of August. From a single season's fruiting, which is not always a fair test, we discover a slight tendency to looseness of bunch, which may be against it as a grape for the vineyard. It is, however, worthy of further test.

Vergennes.—Has done well everywhere where grown the past season, proving healthy, productive, and one of the most reliable.

Early Victor.—The latest candidate for public favour amongst the early blacks. Not yet fruited in Canada, but from growth of vine would pronounce it a very hardy and mildew-resisting variety. The well-known grape grower, Geo. W. Campbell, of Delaware, Ohio, speaks of it as follows: "The best and most promising black grape that I have ever seen. Quality rich, pleasant and sprightly. Earlier than Hartford or Moore's Early or any other black variety I have grown."

Moore's Early.—Has grown well. The only fault to the fruit is that it only retains a good flavour when first picked.

Senasqua.—Is also making a very fine growth.

Owasco.—A light red grape hardly coming under the head of *new* fruits, still being so little known and having so many good qualities we notice it in this report. Supposed a seedling of the Catawba,. Is said to combine the following desirable merits: Earliness, large size, good quality, beauty, productiveness, and being perfectly hardy. One grower who has a large sample vineyard in the Niagara district says he would give it the preference, as a grape for the vineyard, of all other red varieties.

Brighton.—Has done well everywhere the past season, and is rapidly pushing itself to the front as a grape for the vineyard.

Burnet.—Seems to have proved a total failure in many districts the past season. It

made a strong growth of wood and set some fruit very loosely, but what scattered bunches there were mildewed so completely that scarcely a berry was left uninjured.

Williams' Seedling Grape, No. 1.—Continues a strong grower and immense bearer. Bunches large and well-shouldered. Quality fully as good as Concord and so closely resembling that grape that it might be sold in the market for it. Ripens with Concord. Wood short jointed, foliage resembling the Isabella. The bunches average larger than Concord; berry adheres well to the stem; skin, thin and tough.

Williams' Seedling Grape, No. 3.—Fruited this season. Berry as large as Rogers' No. 36. Very compact bunch, not shouldered; skin, very thick; flesh, pleasant, but not so desirable for market as Seedling No. 1. Keeps well and would ship well.

A white grape supposed to be a chance seedling, the property of Mr. J. H. Williams, of Goderich, fruited the past season. The wood and foliage of the vine strongly resemble the Delaware. The bunch averages larger than the Delaware, and the berries about the size of, or rather larger than the Clinton, not so compact as the Delaware, but quality is decidedly good to very good, and berry clings well to stem. Another season will develop general quality of fruit better. It seems a good keeper, some bunches having been kept loose in paper bags up to Christmas with quality fully preserved.

PEACHES.

Stevens' Rareripe.—Origin, Hudson River. Large yellow, ripening a little after Crawford's Late. Quality so fine as to sell readily the past season at $7.00 per bushel. Highly recommended by Chas. Downing. The trees will be offered for the first time in the fall of 1883, as a number of the leading nurserymen in New York State have budded it quite extensively the past season. One firm, after thoroughly investigating it, have put in fifteen thousand buds of this variety alone.

Gov. Garland.—A western variety which is said to be earlier than Amsden's. We would like to draw attention to the wood being harder of this than any other variety, which, we think, would make it sufficiently hardy to stand even a colder section of country than that generally devoted to peach growing. We would like to see it tested in some sections well north, in order to fully test its hardiness.

Schumaker.—Claimed to be earlier than Alexander. Originated at Fairview, Pa. Medium to large; bright yellow splashed with crimson; juicy, melting and rich; parts freely from the stone when fully ripe. Recommended by Thos. Meehan, of the *Gardeners' Monthly.*

John Haas.—A new peach of bright colour and white flesh, succeeding Hale's Early and the earliest of the large freestones. The particular merit claimed for it is its extreme hardiness, it having endured eight degrees of frost while in bloom, without injury to the crop of fruit, in the State of Illinois.

Clarissa.—Very large, yellow flesh, fine flavour and appearance. Said to be the largest peach known.

Sener.—Large to very large, of best quality, yellow. Bears full and regular crops.

Lord Palmerston.—Very large; skin creamy white, with a pink cheek; flesh firm yet melting; very juicy and rich.

May's Choice.—A large and beautiful peach of the highest quality, ripening immediately after the Early Crawford; in size and form closely resembling that variety, but superior to it in richness of colour and high vinuous flavour; tree a good bearer.

PLUMS.

Large Golden Prolific.—A seedling originating in a cold section of Ontario, where the original tree continues in a healthy, vigorous state, and bearing large crops every year. Fruit, about the size of and resembling the Yellow Egg, but finer quality and more productive; tree one of the strongest growers.

APPLES.

The failure of this crop the first season opens a field for investigation as to whether any special varieties are proof against unfavourable weather or insects that may have caused its destruction.

Among the newer sorts we find the Stump and Wealthy bearing full crops, the latter variety withstanding the attacks of the aphis when the growth of other sorts close by has been almost entirely stopped by this insect.

Ivanhoe.—An apple which has just been introduced in New Jersey as a late keeper; price, $1 per bud. Small size—colour, dull greenish yellow, worthless for anything but a cider apple.

Salome.—A seedling originating in Ottawa, Illinois, which is being grown by several leading nurserymen. Fruit, medium in size; colour, pale yellow, shaded with light red and splashed with dark red; flesh, tender, juicy, mild, sub-acid. Fruit adheres so firmly to the tree that it is not blown off by high winds. Tree in hardiness can be classed with the ironclads.

Red Bietigheimer is said to be a valuable addition to the new list that is likely to be introduced soon. It is German in origin; fruit large to very large, roundish inclining to conical; skin pale cream-coloured ground, mostly covered with purplish crimson, firm, sub-acid, brisk, pleasant flavour. Abundant bearer worthy of extensive cultivation, ripens September. So speaks Messrs. Ellwanger & Barry, of Rochester.

Scott's Winter.—An ironclad apple grown extensively by Dr. T. H. Hoskins, of Vermont, a very practical and noted horticulturist, and is highly recommended by him in the following terms: "The apple which well replaces for us the Roxbury Russet of a milder climate. It is of a medium size, heavily striped and sometimes covered with red. Hard as a rock until April, at about which time it begins to mellow, becoming mild and aromatic, and far better in quality for a dessert fruit than Roxbury Russet, keeps fresh and crisp well into July."

Magog Red Streak.—Second only to the Wealthy, of all the hardy winter apples. Tree a profuse bearer; fruit large and a good keeper until April; colour light yellow, shaded, striped and splashed faintly with light red over half its surface; flesh, yellowish, moderately juicy, mild sub-acid; stem short. This is also as reported by Dr. Hoskins.

Ontario Apple.—Has freely fruited in Huron, and so far gives general satisfaction. It has the good point of holding to the tree like grim death. It still remains to test it as a cropper and value in market. Mr. C. J. Naftel, a Goderich township member, picked seventy-five splendid apples off his Ontario tree this season, and he thinks so highly of it that he has set a number of grafts from it upon other stocks.

The following new varieties of apples were fruited this season at Cherrydale farm in Colborne township, county of Huron, by the enterprising proprietor, Mr. LeTouzel. Reinette de Lion, Verl Pippin, Romeril, Noir Binet, Cherrydale, Taylor Fish, Petit Jean, and Norfolk Beefin, which we describe as follows:

Taylor Fish.—Still continues to bear heavy crops and fruit in excellent order for cooking up to January.

Petit Jean.—Strongly resembles the Brockville Beauty in colour, covered with white dots, and contains many raised ribs from stem to eye; flesh white, crisp; flavour pleasant; quality fair. A handsome apple for dessert table and evidently a good shipper. Keeps into February.

Reinette de Lion.—Medium size, deeply flushed all over a yellowish cinnamon russet surface, similar in shape and eye to Blenheim Orange; flavour slightly tart, brisk, pleasant, good, and resembles considerably the Westfield Seek-no-further; stem slender. Keeps well into January, and would ship well.

Norfolk Beefin.—Similar to the Chenango Strawberry in shape only coming more to

a point at the eye and smaller in size than that apple. Greenish yellow with splashes and streaks; flesh firm, juicy, crisp and good. A good winter-keeper.

Noir Binet.—Colour dull deep green covered nearly all over by a deep dark red; form flat, with eye slightly depressed, average size of Colvert; flesh greenish, juicy and pleasant, but lacks in decided flavour being rather insipid. Keeps till spring.

Romeril.—A sweet apple about the size of Talman Sweet, is not likely to be of value. Green, with crimson blush on cheek, and brown dots covering surface; deep open eye; stem short. It keeps well through May.

Cherrydale.—A home seedling, yellow, with cheek blushed with bright lively crimson. Has nothing to recommend it to particular notice.

Vert Pippin.—About the size of a large Kentish Fillbasket; green, with a blush cheek, dull; calyx open; very short stem; quality only fair; good cooker. Keeps until New Year.

PEARS.

Kiefer's Hybrid.—Considerable difference of opinion exists regarding the quality of this fruit, which mostly arises from the manner of ripening it. When gathered a little before maturity and packed in tight packages or smothered until fully ripe, it will be found to fully equal the Beurre Clairgeau as a dessert fruit, and is one of the best for canning purposes. Tree a hardy, strong, handsome grower, and perhaps as near blight-proof as any pear; is enormously productive, coming into bearing at two years from the bud. These can be grown as surely and cheaply as apples, and will prove a great acquisition to the list of pears.

Le Conte.—Too tender for Canada—killing to the ground when budded on the Quince, although succeeding in the Niagara District when top-grafted on the Flemish Beauty.

Of over fifty new European varieties of pears, imported for testing, the following are proving hardy and strong growers: British Queen, Lucie Grieve, Belle Anna, Louis Cappe, Bon Chretian Prevost, Leger, Antoine Lorimer, Madmoiselle Blanche Sannier, Comptesse Clara Frys, President de l'Estainot, Cure Carnoy, Philip Couvereur, De Grenna, Souvenir Trayve, Henri Decaisne, Souvenir de Rouen and Zoè.

ORNITHOLOGY.

The President announced that he appointed as a committee on ornithology Messrs. Walter H. Dempsey, B. Gott, and W. E. Saunders.

At half-past twelve the meeting was adjourned until two o'clock.

FRUITS ON EXHIBITION.

Mr. Wellington read the following report:—

Mr. President and Gentlemen of the Fruit Growers' Association.

Your Committee appointed to examine the fruits on exhibition beg to report as follows:—

PEARS.

Josephine de Malines.—Shown by P. C. Dempsey, of Albury, Ont. The best winter pear in quality grown in Canada. Rich, juicy and sprightly, with a fine aroma.

Beurre Grise.—Quality medium, good keeper, medium to large size, green skin splashed with russet.

Lawrence.—Quality good, medium size, good keeper.

Vicar of Winkfield.—Quality varies; cannot be depended on and would not recommend this pear.

Champion Quince.—Shown by A. M. Smith, St. Catharines. Large size, and an improvement on the Orange. Shows excellent keeping qualities.

APPLES.

Arnold's Beauty.—Good keeper, quality fair.

Fair samples were shown of Roxbury and Golden Russet.

Ontario.—Good keeper, juicy, sprightly, quality fair.

Nonpareil.—Shown by Mr. W. E. Wellington, who received it from Nova Scotia where it is largely grown for the English market. Fruit medium, roundish, conical, yellowish green, with patches of dull russet and red in the sun. Flesh crisp, juicy, mild acid, good. An excellent keeper.

Nonpareil Russet.—Fruit small, greenish yellow covered with thin, dull russet, crisp, juicy, only fair quality. It is, like Nonpareil, largely grown in Nova Scotia for the English market.

Ben Davis.—Size, medium to large; colour, yellow deeply splashed with red; quality, inferior. This apple is in great demand on account of its excellent shipping qualities and fine appearance.

Fair specimens were shown of the Wagener and Baldwin.

Canada Baldwin.—An excellent apple. Medium to large size; colour, bright red, fine keeper; sprightly, juicy, sub-acid; quality better than fair.

Hastings.—Of good size; skin, yellow splashed with red; quality fair, but a little dry. Valuable on account of extreme hardiness—being a seedling of Fameuse.

Mr. R. Brecon, of Richmond Hill, shows four seedlings. Nos. 1 and 2 inferior in appearance and quality. No. 3, a Russet which may be of some value. Has character: but has been poorly kept. No. 4, worthless.

Mr. Wm. Roy, Owen Sound, exhibits good specimens of Yellow Bellflower, Northern Spy, Baldwin, and three seedlings. No. 1, Royston Park, medium size; deep yellow splashed with red; quality medium, and sprightly sub-acid. Nos. 2 and 3 cannot be recommended.

Mr. Thos. Beall, of Lindsay, shows excellent specimens of the Ontario apple.

GRAPES.

Three fine clusters of Catawba grape are shown in an excellent state of preservation. Also three clusters of Prentiss in fine condition. Quality good.

W. H. Marcon, of Guelph, shows a seedling potato raised from Myatt's improved Ashleaf and Early Vermont. Medium to large size; flatish-oblong; colour, white. Eyes well on surface. From general appearance would judge it to be an excellent potato.

All of which is respectfully submitted.

P. C. Dempsey,
W. E. Wellington,
A. McD. Allan,
Geo. Leslie, Jr.,
A. A. Wright.

PROFITABLENESS OF GRAPES.

The next topic for discussion was, "Can we make the Cultivation of Grapes Profitable? If so, how? With what Varieties and what System of Cultivation?"

Mr. Clark, of Lockport, was invited to introduce the discussion, and said:—I am a young man still, and would not presume to have any superior knowledge in regard to grapes, particularly in the presence of those old, gray-headed gentlemen, whose articles I have read and under whose instructions I have been for years; such, for instance, as Mr. Arnold and your Secretary; but I am glad to give you what little experience I have had. I should say that the cultivation of the grape for table and market purposes is taking quite a prominent position in western New York, and I should judge from the appearance of the fruits at your fall exhibitions, particularly at the one held this last September in Toronto, that you are not far behind us in the growing of the common native grapes in Canada. In fact, I think you are a little ahead of us in Niagara county. I have a vineyard of about fourteen acres, which I planted with a view to growing fruit for market purposes. Of the black grapes I find the most profitable with me to be the Hartford. It has the fault, when young, of the fruit dropping freely from the stem; but I find that when the vines become of age they overcome that defect somewhat. The Concord, of course, thrives with us as it does all over the country where grapes will succeed. I have been quite successful with the Wilder grape; by giving it a little extra care and attention, I can grow it and make it a very profitable grape. I have been obliged, however, to make markets for it gradually. If it is sent into the wholesale market as a common black grape it will not sell for more than the Concord; but where the grape is known it will sell for three or four times what the Concord will. Among the black grapes we find the Moore's Early quite a profitable one. Part of our crop of it we brought here last September, and sold during the fair at fourteen, fifteen, and twenty cents a pound wholesale. Among the red grapes I find the Niagara and the Agawam very successful. I have had a fine Worden in my garden for the last fifteen years, and it has always developed so much like the Concord—I see so little difference in them—that I have not propagated it at all. Down in the southern part of the State, they seem to see a little difference; but if I see any difference in it at all I do not think it is as productive as the Concord, although it may ripen a mere trifle earlier.

Mr. Roy.—How much earlier than the Concord?

Mr. Clark.—I do not think it is more than two days. I am speaking of the quality of the Concord as we grow it here in comparison with the quality as grown down on the Hudson farther south. We hardly know what a good Concord is as compared with a well-ripened Concord grown in those regions. They ripen the Concord so thoroughly there that we hardly appreciate its quality as grown with us. The Agawam needs a little extra care in management; when properly planted, grown, and cared for, it yields abundantly.

The President.—Have you found any difficulty in regard to mildew?

Mr. Clark.—Not at all with the Agawam. With the Salem we find some trouble from its mildewing. There are good reports of the Brighton wherever it has fruited. Everyone seems to be surprised with it. They have found it to be of much better quality than they had expected. I have never fruited the Brighton on my own ground. From what I have seen of it, it appears to be of a tender nature. They claim where they have fruited it in other localities that it is better. Among the white grapes I have had to rely entirely upon the Martha as a market grape. I have done so for the last ten years until this last year, when I had quite a crop of the Niagara, several tons of it. I have given the Niagara quite a test as a market grape. I shipped it to as many different markets as possible, and sold it through the hands of wholesale commission men to test it thoroughly, and I was agreeably surprised to find that it invariably sold at a higher rate than any other grape in the market, not excepting the California. The Martha is nowhere in comparison with the Niagara as a producer. The Brighton ripens with the Hartford; you may go through the finest and select the bunches that are the earliest ripe, and market it with the Hartford. The Brighton has this valuable feature as a market grape,

that although the bunches are fit to be picked early, they will remain upon the vines a long time, and improve in quality.

Mr. A. M. Smith.—I would like to know if Mr. Clark knows anything of the parentage of the Niagara.

Mr. Clark.—It is a cross between the Concord and the Cassiday, and all who know what the parents are will know what its quality is. It was hybridized by hand. The Niagara is a seedling of the Concord fertilized with the Cassiday. I grow my grapes on trellises. I have three wires of about number nine or ten. The upper wire is about five feet and a half up. I set my vines about ten feet apart, and have the posts twenty feet apart. Upon the solicitation of a gentleman who has a wine cellar in Brockton, we sent him several hundred pounds of the Niagara, and he is so well pleased with the wine it produced that he and another gentleman are going to plant about fifteen acres of it. There is a probability of about seventy-five acres of it being planted out about Brockton this year.

The President.—When do the owners intend to send that grape out?

Mr. Clark.—They have not set any particular time to sell it yet: probably they will not send it out as long as they can plant any vines under their contract, probably not for two years at least, if then.

Mr. Beall.—How do you protect your vines in the winter, or do you furnish any protection?

Mr. Clark.—We do not furnish any protection. In 1879, the Niagara produced in the neighbourhood of thirteen and a-half pounds to the vine. The grapes have sold from twelve and a half to twenty-five cents a pound wholesale.

Mr. Morris.—There is one grape he did not mention, a white grape, which has done very well this year; that was the Lady. The fruit of it sold in a city on the other side this past season at twenty-five cents a pound. That grape has been accused of cracking, but this season it has not done so. I think that people who expect high prices for white grapes to continue will be disappointed, because I think they are going to become as plentiful as the black. I believe the Niagara will be a good grape, although not of the highest quality. The Pocklington has ripened well this year at Montreal, and the vine being so very hardy and so free from mildew, I think it will prove very valuable.

Mr. Gott.—There is no doubt at all about the profitableness of cultivating grapes in this country. We are not experimenting in that direction at the present time. Our friend from Lockport specially mentioned the Agawam as being a profitable variety there; with us it is quite the contrary, because of its being attacked by mildew. I was glad to hear the favourable account of the Hartford, because it is a kind of friend of mine. I think that of all the grapes the Iona perhaps stands number one in regard to internal value. In favourable locations it ripens well with us. The Lindley grape, that is, Rogers' No. thirty-nine, is perhaps the best of all the red grapes of Rogers. His No. four and No. forty-four are exceedingly valuable grapes, and can be grown well in most localities, and they give large returns. Among white grapes the Martha is no doubt a success in our country. The fruit is perhaps not of the highest quality or of the highest value, but it is good. The vines are very hardy.

The President.—A basket of these Niagara grapes was sent to me late in November. I received it by express without any note. I did not know exactly where the basket came from; but when I opened it I found it was filled with Niagara grapes. The grapes were at that time in a good state of preservation. They were in what I would call a fair marketable condition. They were not so sprightly as they would have been in the month of September or October, but they were in good enough condition to offer for sale, and would have sold readily. I submitted the samples to a number of friends, our worthy secretary, our director, Mr. Denton, and any other member of the Fruit Growers' Association that I could get at that time, and they were all pleased with the grape. I would not consider from my own standpoint that it was a grape of the first quality. There are a great many other grapes that I would rather eat. At the same time I think it is a grape that will take well with the public, and sell at a good price. I should think it must be a very vigorous grower, and it is no doubt very prolific.

Mr. Bucke.—I received a basket of the Niagara the same way at Ottawa. It was a long way to ship them, but they came in very good condition. I think the grape was

rather on the sweet side. There was no sprightliness much about it, but it was very, very ripe. The bunches were nice ones, closely set. I think the grape will be a very fine one for market. I think, however, a little more sprightliness would make it a better market grape.

Mr. Wellington.—I think there is little doubt that grape-growing will pay in Canada, at least in Western Canada; and I believe that the most money has so far been made out of the old Concord; though it cannot be called a very high-class grape, yet it is hardy and productive, and has generally good qualities. We have fruited the Worden now two years on a number of vines in our small vineyard, and we have found it to be at least a week earlier than the Concord. It is of better quality, though a little smaller, and I think fully as productive. While it ripens earlier than the Concord, it hangs well to the vines. This last season has not, I think, been a good test for grapes anywhere, on account of its lateness; but a year ago in the middle of October I found the Worden hanging to the vines in perfect condition, and the quality was not impaired, though the main crop had been taken off several weeks before. This year grapes seemed to change their season with us, while last year our Brighton ripened first; this year they were almost the last. We shipped to Toronto, Delawares, Wordens, and a few Concords, and also Rogers' No. four, before we could pick our Brightons; but after all the Brighton was the grape. I never saw anything so handsome as our Brighton vines this year. The Brighton will not bear transportation for long distances, but for short distances it can be shipped readily, and will command good prices, once it is known. I think it is equal in quality to a good many of the hothouse grapes that are on the market. Rogers' Nos. four, fifteen, and nine, I consider among the best of the Rogers. They do not mildew with us, although the Salem, which I consider a grape of excellent quality, mildewed this year so badly that we could not pick a cluster, though the vines were hanging full. With regard to white grapes, I consider the Lady a better grape for us here in Canada than the Martha. I believe it is more productive; it is earlier, and it has, if anything, a better flavour. With us it has been very productive. The Pocklington came off our own vines this year ahead of the Brighton, though it will not do so every year. As I have said, the season seemed to have changed for grapes this year. The Iona ripens too late for general cultivation in Canada. Notwithstanding the lateness of the season we obtained fine samples, and they ripened up very well, although coming in latest of all. The Concord was good also.

Mr. Clark.—In relation to the gentleman's report of the Wordens, it agrees very much with the reports from the middle parts of New York State. There seems to be at least a week's difference there between it and the Concords as to the time of ripening. It also seems to be of better quality. I have fruited the Lady grape in my garden, and it appears to be a hardy grape, although a slow grower with me. The fruit ripens slowly; and being left a little too long on the vines, nearly every berry was cracked throughout all the bunches. In quality it is about the same as the Martha. It is a little larger berry, and ripens a little earlier, and it comes a little sweeter into the market.

Mr. Gott.—Was the cracking after very high winds?

Mr. Clark.—It was after rain. It cracks a good deal, as the Delaware does, in a hard rain. With us the Delaware growing on rich soil cracks, and we lose a considerable portion of the crop sometimes, after a spell of damp weather. Amongst the other new varieties the Prentiss has fruited about Lockport, and it is a fair grower. It showed a little mildew this past season, both upon the leaves and upon the fruit. The Pocklington also fruited there. It seemed to grow very slowly with us. The fruit did not ripen at all with us—until very late, at least. It was quite passable in quality about the last of October.

Mr. Beall.—There is another new white grape that is just now being placed before the public, called the Jessica. I would like to get some information respecting its qualities.

Mr. A. M. Smith.—I have never fruited it, but I have seen it fruited in our locality and I consider it a very valuable grape. It is a grape of very fine quality, and one whic I think every amateur should have. The size of it and its clusters would not make it, think, a very valuable market grape, but for a home grape I do not know of anythin that is more promising at the present time. With regard to the Niagara, I formerly

when I saw it, said "sour grapes," because I could not get it; but this year I have been to see it in all its glory and bearing at Lockport. I saw vineyards of eight or ten acres of different ages—some three or four acres in bearing, and I certainly never saw a more promising looking grape. As regards healthiness of foliage, uniformity of cluster, and apparently its shipping qualities, I never saw anything that attracted my attention more favourably than the Niagara. The Pocklington I consider a very good grape. It has been fruited in our section the past season. I received a vine of it some few years ago—from Mr. Morris, I think; but I have not succeeded in fruiting it yet, although one of my neighbours had some very fine samples of the Pocklington this year.

Mr. Wright.—When does it ripen as compared with the Concord?

Mr. Smith.—It ripened about the time of my Concords; but I considered his location a little more favourable than mine. In regard to the Brighton, my experience was that it ripened quite a good deal before the Concord this year, and the Worden seedling was at least five days ahead of the Concord with me. The Lady I got some two or three years ago, and I was disgusted with it, because it was, I thought, such a delicate grower. I think there must have been something wrong with the vine I got, because I have got some since and planted, which fruited this year and pleased me very much. It ripened nearly as early as Moore's Early with me this year. I did not see any indications of cracking. I consider it to be a very promising grape.

Mr. Dempsey.—I received some little time ago a basket of Niagara grapes, and ever since I had the pleasure of tasting them I have looked upon the Niagara as the coming grape. My estimation of it is still increasing. I begin to like the grape better than I did at first, but I do not like the way they are keeping it. I have fruited the Worden grape for two years, and with me it is from ten days to two weeks earlier than the Concord growing beside it. Locality has a good deal to do with the maturing of grapes, and so has the quality of soil. We fruited the Lady grape this year by the side of the Worden, and there is very little difference in their period of ripening. The Lady grape is very early, in my opinion, and a very promising grape. I fruited the Moore's Early also this year near the Worden, and I am inclined to think that if I have the Moore's Early at all it is so near like the Worden that it is not worthy to be called a different grape. Perhaps I have not got Moore's Early. It is possible I have not. I have thought that I would order it again this spring to see if I would get the Worden again. I find frequently throughout the country that parties are cultivating the Worden who have not got it at all—they have got Concords. That, I presume, is not the case in Lockport, however. If I was going to plant grapes again, and had suitable soil and a suitable location for it, I would plant largely of the Delaware. It is an old grape that we have tried for many years, and it appears to be giving perfect satisfaction yet. There is no grape in our market that is sought after more than it. Though it is small people do not despise it on that account. With us the Concord was never a success until I changed the locality in which I had it planted. Now it is doing very well; but as the Worden is so near like it and the Concord comes so many days behind it I do not see that we require the Concord grape at all. I have nothing that pays me better than Rogers' No. 44, on account of its keeping qualities. It ripens sufficiently early, and ripens every year, and we have no difficulty in keeping it until midwinter or even longer. The Agawam produces immense grapes with us. I have picked considerably over a bushel off a single vine. But it ripens unevenly. We are obliged to pick the fruit over several times. Nevertheless I believe the Agawam to be one of the most profitable of Rogers' hybrids. There is nothing better, however, than number three and number nine when it comes to a question of flavour. I think those two are just about as good as any we have of Rogers' hybrids, though not so good as the Brighton. I would not risk an extensive vineyard of the Brighton, because it is a grape that deteriorates in flavour quickly, and there is danger of our getting an overstock of it and not being able to hold it. Our Wordens this year matured with the Hartford, and not more than—I was going to say six hours—after the wonderful Champion or Beaconsfield or Talman, which is supposed to be the earliest grape in cultivation at the present time.

Mr. Roy.—Which of Rogers' hybrids do you think is the finest flavoured grape?

Mr. Dempsey.—Three and nine—in fact three, four, and nine. When it comes to a matter of profit I would prefer No. 44.

Mr. Roy.—I have always preferred the Agawam.

A Member.—I prefer it also.

Mr. Bucke.—I prefer the flavour of the Salem; but it is so apt to mildew. There is one prrticular grape grown largely about Ottawa, a white grape, which Mr. Gibb calls the Chasselas of Aylmer. It was brought to this country, I do not know how many years ago, by some French family coming out. It ripens very early, and has very good bunches, but the foliage is liable to thrip, as that of almost all the white grapes is with us. The Champion is a grape that has been a good deal talked down; but certainly if you have an early frost it is better to have some grape than none at all. Some people grow grapes because they cannot grow apples, and for the northern sections of this country, where the seasons are very short, I would rather have the Champion than nothing at all. I think the highest flavoured grape is the Burnet. It is a very strong-growing grape. The worst about it is that it has some small fruit in some of the bunches. But I consider it a very valuable grape, and I think any person who is growing for himself should have a Burnet. The Iona is one of the best grapes that grow, but it is certainly too late. We get it to ripen occasionally in Ottawa. The Lindley is better than the number fifteen, but the bunch is not so large. I like Rogers' number nine; I think it is one of the best grapes there is. It is a good bearer. The bunch is close, though not too close, but is not very heavy.

Mr. Gott.—The Delaware is a very high-flavoured grape and a very valuable one; but can the grower make it profitable? We get, say, two cents a pound more for it than for the Concord and some other varieties, but where we pick one pound of Delawares we can pick two or three pounds of Concords with the same labour and the same culture.

Mr. Dempsey.—I think the difference in weight of the products of an acre of Concords and the products of an acre of Delawares would be very little with us. It would not amount to one cent a pound. The Delaware succeeds very well with us, while the Concord we cannot brag of any. The only difference there is in the two is that the Delaware is a little more expensive to grow. It requires a little more fertilizers to make it maintain its vigour.

Mr. Bucke.—In growing the Delaware don't you find there is a great deal of pruning to be done about it?

Mr. Dempsey.—I do not think so. Some of Rogers' hybrids require more attention than the Delaware.

Mr. Roy.—I find the Delaware has always to be put in a hot-bed.

Mr. Dempsey.—The Delaware is exceedingly stubborn to propagate.

The President.—The Rogers' hybrids seem to monopolize a large share of the attention of this meeting. My experience of them is that the majority of them are not desirable, for the reason that they mildew so extensively. I had two vines of Salem last year which set in abundance all through. I should have at least a bushel of grapes; but before they were half-grown the mildew entirely covered the foliage and fruit, and I failed to get a single specimen of the fruit. I think it is a grape we should not recommend our members to try, because I am satisfied not only from my own experience but also from the experience of a large number of other people that it is one of the most liable to mildew of any grapes we can grow. Rogers' number fifteen, Agawam, is not so liable to mildew with me, although it has mildewed; but it sets such a loose bunch that it is not a sightly grape to send to market. It is unsightly both on that account and on account of its colour. The two varieties which I have found the most satifactory are number four, which is Wilder, and the Merrimac, number nineteen. The Merrimac is to my mind the most satisfactory of the Rogers' varieties. The berry is very large, and the bunch is so large that it attracts the attention of every one who sees it. It bears well and does not mildew to any considerable extent with me, and I have had an experience of perhaps three or four years in fruiting it. The Iona is a very desirable grape, but it does not usually ripen with us so as to be satisfactory. The Israella ripens well, and, I think, is a grape of very fair quality; and last year the Ontario—the grape which we have all taken pleasure in running down—succeeded well in my grounds. It ripened well, and the clusters were very large

and handsome; and I do not think that in a locality in which it succeeds it is a grape to be despised. The Delaware succeeds very well in our district; and the Concord, of course, succeeds everywhere. I think that of the white grapes the Martha, perhaps, has done better with me than any other variety. I have not fruited the Lady yet. I find it a slow grower—almost as slow as the Rebecca. I was surprised to hear Mr. Clark say that the Pocklington was a slow grower. I find it, amongst about a hundred varieties that I have, to be one of the most vigorous growers of the lot; but I have not yet fruited it so as to be able to give any other report on it.

Col. McGill.—The variety that I find the most profitable of all that I grow is the Concord. The Hartford Prolific has done very well with me for the last two or three years, and as the vine grows older it does better. Moore's Early drops from the stem with me. It is earlier than the Concord some ten days on my grounds. The new black grape that has been brought out, the Worden, claims some attention. Not only in my grounds, but in other grounds at the town of Whitby we have not discovered more than two or three days difference for the last two years between it and the Concord as to the time of ripening, and it does not produce nearly the grapes with me that the Concord does. Of Rogers' hybrids I have Nos. 4, 9, 15, 19, 43, and the Salem; and the only one of Rogers' hybrids that has ever shown any mildew—and I have now been fruiting them for the last ten years—is the Salem. Three years ago the Salem showed some signs of mildew, but this year none at all. So far as price is concerned the Brighton stands A No. 1. I sold all my Brightons this year at twenty cents a pound by the basket, and I had a very fine crop. I had clusters that weighed fourteen and fifteen ounces. Mr. McLean, a brother-in-law of the gentleman in Rochester who raised the original vine, says he never saw any clusters in Rochester equal to those I took to market and made him a present of. In white grapes I have the Martha and Lady. I like the Lady very much. The only fault I have with it is that it is rather slow in growth—at least I have found it so. But it is early, and I consider it a very fine grape. In my section of the country I think I could make grape-growing more profitable than I have ever made farming. I am satisfied that the small piece that I had in grapes this year paid me better than eighty bushels of wheat to the acre at two dollars a bushel. I had about seven hundred pounds of grapes on a piece a good deal less than the sixteenth part of an acre, and I sold them at from nine to twelve cents. The Delaware we can never get over twelve and a-half cents a pound for. The Champion is not a first-class grape; but if it is well ripened and properly cared for, it is not a very bad grape; and I think there is about as much money in it, take the country through, as in any grape that we are growing. I had no difficulty whatever in the town of Oshawa in selling my Champion grapes for eleven cents a pound in quantities of fifteen and sixteen pounds at a time; and there is a gentleman living away north of me who sells them for a higher price there. I am well satisfied that in our section of the country, where the ground is favourably situated, grape culture can be made profitable.

Mr. Bucke.—I see some people smiling about the Champion, but a gentleman in Ottawa sold the first cuttings of the Champion at twenty-five cents a pound.

Mr. Johnson, Campbellford.—I have tried all Rogers' hybrids, I think, and fruited them for twelve years, and I have not seen a sign of mildew on them yet. Rogers' No. 15 is perfection, I think—number one quality and a long keeper, and bunches seem to improve in size with age. I have had them weigh over a pound. No. 4 I consider the best among the black. I like Lindley also, and Nos. 19, 39, 41, and 43. My soil is gravelly. Rogers' hybrids all seem to do well in that neighbourhood. The Delaware also does very well. I have taken twenty-five pounds to the vine off the Delaware the third season after planting it. The Champion I do not care very much about. I like No. 3 about as well, and it ripens just as early as the Champion. The Champion is a poor quality of grape. I have fruited the Lady. It does not retain its quality more than two days after it is ripe with me; it gets insipid. And the Brighton the same. I consider grape-growing very profitable. I have now some one hundred and fifty varieties. I have not fruited them all yet. The only unhealthy vine I had this past summer was the Don Juan, and it appears perfectly hardy. I have the Niagara also. I fruited five vines this last

summer. They ripen quite early. I had two as good bunches, I think, off the Niagara as any they grew at Lockport. I have two hundred vines of the Niagara.

Mr. A. M. Smith.—With regard th the profitableness of grapes, it came incidentally under my notice how much a neighbour of mine realized for his grapes last year. He had three acres, mostly Concords, and the same man who was handling my peaches sold his grapes. I asked him if he could give me the net proceeds of the gentleman's grapes, and he said he could. He said he had paid him $800, and he knew of another individual who had paid him $100 more, making $900 from a crop of three acres.

Mr. Denton.—On my visit to Port Stanley, to Bishop's old place last summer, I found the whole of his Rogers' varieties mildewed. I found the soil was sandy. The question naturally arose in my mind, has the soil anything to do with the mildewing of the varieties that you are now speaking about.

Mr. Dempsey.—We have found some of the Rogers' varieties mildew so badly that we have abandoned the culture of them. Among them is No. 5, No. 14, No. 44, and No. 22. I took these out of my grounds two years ago, and since then I have not seen any mildew on the Rogers' varieties. I grow Rogers' varieties on clay and on sand, and I fail to see any difference in the mildewing between the vines on the different soils.

Mr. Arnold.—I, for many years, suffered greatly from this grape fever, but I find latterly that I have cooled down as low as zero—perhaps a little lower. Many years ago I invited the Fruit Growers' Association—in fact I challenged the Board—to come up to my place and I would show them Rogers' hybrids growing in the open ground that would beat anything they could produce near Hamilton grown under glass. The President and several of them came up there, and they admitted that they had nothing growing under glass equal to Rogers' No. 15. So long as I could keep up that quality of grape the fever lasted. But I cannot speak so highly of grapes to-day. Grapes have been in a measure a failure with me the past few years from various causes.

A Member.—How does the Othello do with you now? It does very well with me.

Mr. Arnold.—It is a failure with me. It does well in France. There are many people in my section of the country who cannot succeed in growing grapes now as they used to do. Col. McGill speaks of selling Brighton grapes at twenty cents a pound. Why, we sold all varieties in our section at five cents a pound this last year, including Brightons. I, too, received a basket of the Niagara grapes. I never knew whom they came from; but I kept them, and on new year's day we had them on the table, and some of the bunches were in good condition then. I would not like to say much in favour of the flavour of the grape; yet I believe it is a grape that will displace in time that imported sweet grape. There is a wonderful difference, however, in the taste of people in regard to grapes.

Mr. Gilchrist.—I do not know much about grape growing; but it must be very profitable, according to Col. McGill's statement. I have figured it up, and I find that it amounts to $2,240 per acre.

Mr. Beadle.—This calculating the proceeds of an acre of grapes is certainly a very interesting process when you take one particular grape vine, get a pretty good crop off it, weigh the grapes, and take them to some dealer from whom you can get twenty cents a pound for them, and then calculate how many vines you can get on an acre, and how many pounds you can get off the acre, allowing for each vine as many pounds as were got off this particular one. In this way you can make it appear that you will get two or three thousand dollars off an acre. But when I hear those stories I am reminded of a story I heard or read somewhere of a boy who was dodging around when his father came home one day. The father said; "John, what are you doing?" "I am helping Jim." "What is Jim doing?" "Jim is catching rats." "And how many rats has Jim caught?" "Well, when we catch the rat we are after now, and two more, we shall have three."

Col. McGill.—I have never yet said that I was going to raise that quantity on an acre, nor did I think that at all. I am only speaking of the piece of ground I was cultivating. I have the names of the parties to whom I sold the Concords, and the price I received from each, and I can show these to any gentleman at any time who will come to Oshawa and ask to see them.

The PRESIDENT.—I do not think anybody will dispute the statement you make. It is only an inference they draw by multiplying the quantity. My Brightons that I received twenty cents for were for private use.

ROSES.

MR. BEALL then read the following paper :—

To the Officers and Members of the Fruit Growers' Association of Ontario.

GENTLEMEN,—Your Committee appointed at a previous meeting to enquire into the progress of rose culture in this Province, beg to report :—

That the progress made during the last few years in this pleasing department of horticulture has been much greater than at any previous period in the history of the Province. The increasing interest felt by our people in this branch of floriculture is the more gratifying as it is altogether a "labour of love," no pecuniary profit resulting therefrom.

The increasing demand for Hybrid Perpetuals during the last few years shows how rapidly the taste for rose culture is being developed. We have good reason to know that the number of rose plants sold in this Province during the last three years exceeds the total number sold previous to that time.

The unusually cool, rainy weather during the months of May and June last seeemed suited to a better development of the beauties of the rose than that of ordinary seasons. For, although the blooming season was nearly two weeks later than usual, the blossoms were most abundant, very large and perfect, and the colour greatly intensified.

The rose is acknowledged to be "the queen of flowers," and its cultivation may with justice be regarded as a standard of social and intellectual culture. In every community the owner of a plot, be it small or large, who cultivutes a few varieties of roses is tacitly acknowledged as being more refined and respectable than persons having similar facilities who neglect this inexpensive means of social refinement.

To produce the best effect with roses they should be planted in groups, for when scattered promiscuously through a flower garden, much of the beauty obtainable by grouping is lost ; and the best results are seen where the bushes are so placed as to receive partial shade from the mid-day sun.

After much consideration your Committee concluded to recommend the following twenty varieties as being suited for general cultivation :

Alfred Colomb.—Bright carmine red ; large, full, globular form ; very showy ; exceedingly fine.

Baronne Prevost.—Deep rose ; very large and full ; a vigorous grower and abundant bloomer ; one of the oldest and finest of this class.

Beauty of Waltham.—Bright, rosy crimson ; large ; very hardy ; very fine bloomer.

Baron de Bonstetten.—Rich velvety ; narrow, large, full ; a splendid sort, though a shy bloomer in autumn.

Caroline de Sansal.—Flesh colour, clear ; very delicate ; large ; very good.

Coquette des Alps.—White, shaded with carmine ; small, but of very good form ; the growth is vigorous.

Coquette de Blanches.—Pure white ; flowering in clusters.

Duke of Edinburgh.—Brilliant scarlet crimson, shaded with maroon ; large and full.

General Jacqueminot.—Brilliant crimson ; very large and showy.

Jules Margotten.—Deep cherry red ; large ; showy ; fragrant ; free bloomer, both early and late ; superb.

Louis van Houtte.—Reddish scarlet and amaranth ; the circumference blackish

crimson, shaded with bluish purple ; very large ; full, and of fine globular form ; growth vigorous.

La Reine.—Bright, rosy pink ; very large ; fragrant.

La France.—Bright lilac, with rosy centre, often overlaid with a beautiful shade of silvery white ; delightfully fragrant.—W. Paul, when introducing this rose into England in 1867, said : "The shape of this rose is not at all regular, as the outer petals are often fantastically twisted and curled. It is, however, good enough and great enough to stand without conforming to conventional rose life,"

Madamoiselle Eugenie Verdier.—Silvery rose ; large, full ; of fine form and habit.

Prince Camille de Rohan.—Dark crimson ; medium size ; very double.

Climbing Jules Margotten.—Carmine rose, lightened with pink ; large, full flowers ; very pretty in bud. This is a decided acquisition ; the flowers are the same as in the old variety, and quite as freely produced ; the growth is more vigorous.

Climbing Victor Verdier.—A very beautiful variety of great merit ; delicate pink shade ; is not a rank grower like the Queen of the Prairies, and can be grown as an upright with very little pruning.

Countesse de Murinais.—The best white moss ; white slightly tinted with flesh.

Perpetual White Moss.—Pure white ; quite mossy ; not a free bloomer.

Glory of Mosses.—Bluish ; very large ; very mossy ; one of the best.

Your Committee would also direct the attention of the members of this Association to the necessity which exists of establishing in some of our large cities suitable houses for the cultivation of roses and other flowers suitable for funeral wreaths, and also for bouquets for wedding presents, private evening parties, public dinners, etc., etc., and thereby apply, for the encouragement of another home industry, the large sums which are annually sent to the United States for such purposes.

Respectfully submitted.

Thos. Beall, *Chairman.*
Wm. E. Wellington,
P. C. Dempsey.

Toronto, February 1st, 1883.

Mr. Dempsey.—There is one rose mentioned there which I think deserves to be spoken of a little more emphatically. It is a genuine tea rose that succeeds out of doors. I have grown it for several years. It is La France. It is a rose that a blind man can enjoy, and that for me is the best kind of a rose. With us, from the time it comes into bloom until the frost kills the foliage or destroys the bud, it is never out of bloom—we can go at any time and pick roses off our La France bush. I would rather lose the complete collection of roses outside of that than lose it.

Mr. Wellington.—I quite agree with Mr. Dempsey in his remarks regarding La France. It is one of a class of roses now become very popular, namely, the Hybrid Teas; and there are some of them nearly, if not quite, as hardy as the Hybrid Perpetuals. I think there is no prettier sight than a group of these La France rose bushes. The great trouble, I think, in growing roses, and the reason why we have so little interest in it, is the fact that the bushes are grown isolated and in poor soil. To bring out the beauty of the rose, which is truly the "queen of flowers," we should group them ; we should have beds. If we cannot afford large ones let us have half-a-dozen bushes. If we can afford larger beds let the number of bushes run up to the hundreds. Then we can group the roses according to their colours, and bring out their beauties to perfection. In regard to the Hybrid Perpetual, I have heard a great many say that they cannot get their roses to bloom more than once during the season. They do not see any difference between the Hybrid Perpetuals and the Summer Bloomers. And why is it? Simply because they do not give the roses enough to feed on. What they want is deep, rich soil; and do not be afraid to apply the pruning knife. Our Hybrid Perpetuals flower from the new wood

they make each year. Too many of our amateurs are afraid to touch the knife to their roses. Now, the old wood must be thrown out. Keep your roses growing the whole season; you can have your bed of them in bloom until they are cut down by the frost. As to the best twenty varieties for growing, that is rather a difficult matter to decide in view of the many hundreds of roses we have in our list; but I have a list of those which I would call the best, that I have selected with great care. They are these: Alfred Colomb, Baron de Bonstetten, Climbing Jules Margotten, Countess of Serenye, Caroline de Sansal, Coquette des Alps, Coquette des Blanches, Empress of India, Francois Michelon, General Jacqueminot, Louis Van Houtte, Madame Eugene Verdier, Prince Camille de Rohan, La France, Gloire de Dijon, Perle des Jardins, Countess of Murinais, Glory of Mosses, Perpetual White Moss, and Salet. If I were going to plant roses I would, in the first place, dig a deep trench, and put into that well-rotted compost to the depth of three or four inches. I would then put in some nice soil and plant my roses, working the top soil well in amongst the roots, firming it about the roots, and give them a mulching. I would then cut them back to within two eyes. Each fall or spring I would give them a liberal mulching of manure, digging that in in the spring, and cutting the bushes back at least two-thirds of the previous year's growth. Some varieties may need a little protection from the mid-day sun in this country. Your moss roses and your climbers you must prune very carefully.

Mr. Beall.—Last year I found very good results from using burnt sods of weeds for manure. I had certain patches of my land overgrown with a certain weed, and we dug that out and burnt it, and I found first-rate results from using that. For manure of the ordinary kind I would prefer that from the cow-stable to manure from the horse-stable.

Mr. Wellington.—The sod of weeds turned over and rotted is, of course, a regular manure for rose growers.

Mr. Arnold.—For many years I used to gather sods from the roadside, lay them aside until they got dry, and then burn them, and I found them superior to any stable manure for flowers.

Mr. Dempsey.—There is no rose that would give more satisfaction than the Gloire de Dijon. It is one of the hardiest of the tea rose family; but there is one thing requisite in growing it. If you grow it under glass in a cold grapery it will succeed. It is sufficiently hardy to stand the severity of the weather with the little protection the glass gives, so long as you prevent the roots getting frozen. If you can prevent the roots of almost any rose getting frozen, you can grow it out of doors. I grew the Gloire de Dijon for a number of years out of doors under glass, without any further protection than protecting the roots. We allowed the roots to be exposed one winter, however, and it failed to put forth any buds. In cultivating roses out of doors where the soil is sandy and there is no snow lying on it, it is necessary to give protection. A clay soil is always better, according to my experience, than sand.

Mr. Slight.—What is the best way to overcome the insect that is so very troublesome on the rose plant?

Mr. Dempsey.—I used to be failing every year in cultivating roses; and I got a little work that was published by Dr. Hole, of Scotland, and he suggests a remedy that you may depend upon every time. It is to maintain a thrifty growth all the time. If you cannot do that by cutting back or by using strong fertilizers, take your rose out and throw it away.

Mr. Beadle.—In response to Mr. Slight's question, I would ask him what insect he refers to.

Mr. Slight.—I think it is the aphis; it is a small insect that eats under the upper part of the leaf and leaves it all perforated.

Mr. Beadle.—That is not the aphis. If it is the aphis, you want to give him tobacco water. It is the red spider, however, and you want to sprinkle the plant with rainwater.

The President.—I think the insect Mr. Slight refers to must be the thrip. It is an insect which it is very difficult to subdue, and it can only be attacked successfully in the earlier stages of its growth. Before its wings are grown its body is soft, and it is

then easily destroyed by the use of alkaline washes syringed on the under side of the leaf; or a lye can be made of whale oil soap and about a pound of concentrated lye, which is really caustic soda. If you delay the application until the insect gets winged, employ tobacco vapour ; that is, burn tobacco, and enclose the bush with some sort of covering ; either set a barrel over it, or make a paper cover. I have seen old hoopskirts used for that when they were in fashion, and a paper containing tobacco hung up by means of a string in the centre. By burning the tobacco in that way, enclosing the smoke, you can entirely destroy the insect. The slug can be reached by syringing the roses with Paris green and water, in the proportion of about a teaspoonful of Paris green to a pailful of water.

Mr. Roy.—I have used whale oil soap for a number of years, about a pound of soap to a pail of water, and I do not find it succeed.

The President.—Perhaps you allowed them to get too old.

Mr. Roy.—No, I commenced early in the season.

Mr. Slight.—It was not for my own information alone that I asked this question, but for the benefit of thousands of people throughout the Province who want to know how to get rid of this pest.

The President.—The principal insects that injure roses at the commencement of the season belong to what we know as the family of Leaf Rollers. They are small caterpillars which worm themselves into the flower buds and eat them. They are very easily got rid of by syringing the rose buds, just as they are bursting, with Paris green and water. A teaspoonful to a pail of water is sufficient if it is good—use from one to two teaspoonfuls in any case. Hellebore will also do in the proportion of about an ounce to a gallon of water. Having got over that difficulty you get a good crop before the thrip comes on. Then about the time the flowers appear you get the slug, that is, the caterpillar. The eggs of the fly are deposited on the under side of the leaf, and the fly has a sort of piercer at the end of its tail by means of which it perforates the leaf when laying. The hellebore is a remedy for that also. The rose beetle is, in our section of the country, very seldom injurious to any extent, although I believe it gets inside the flowers and eats them, and eats the pollen as well. All these enemies are very easily managed except the thrip.

Mr. Doel.—What is it that eats into the base of the bud ?

The President.—This is the leaf roller. It is a very active little creature, and if it gets a chance it pops out the back way or any other way, and drops on the ground. If you rear it it produces a small moth. It is a very numerous and common insect, and very destructive in the buds of the rose.

Mr. Beall.—In growing roses I think the first requisite is to have the bed thoroughly prepared. You cannot possibly make the ground too rich. In addition to the manure that has been mentioned here there is, I find, great benefit from the use of a large amount of charcoal dust. Then with regard to taking care of the bushes, we have found the best results from using whale oil soap at first ; that is, as soon as the leaf buds commence to open to wash them thoroughly with whale oil soap-suds. The only other enemy that we care about much in our neighbourhood is the thrip, which destroys the foliage, and unless the foliage is good I do not give much for the roses. My wife uses for that the remedy you have recommended, sir, employing a hoop skirt with another skirt over it.

A POEM.

Mr. Bucke here read the following poem :—

THE LAY OF THE ANCIENT HYBRIDIST.

BY P. E. BUCKE, OTTAWA.

In the days of Columbus, so well known to fame,
Who over to Cuba did gallantly pass,
There lived a botanical, physicist, man,
Who did much to improve our whole garden "sass."

He lived in the light of sunnier climes,
Some thousands of miles from this beautiful town;
He grew luscious greens for the sake of the dimes,
And he met with a large and increasing renown.

But selections and hybrids were chiefly his plans,
To secure the results which his mind had conceived,
He didn't care much for old nature's poor shams;
In the best that would flourish he only believed.

He thought on this question by night and by day,
In the old Alexandrian lib'ry he read
All those classical books which philosophers say
Would addle one's fancy, or quite turn your head.

In the study of Greek he made a long pause
Over Anaximander, that wonderful man;
Who believed that condensation of air was the cause
Of the world-bodies formed on an aeriform plan.

His conceptions were clear, fundamental and bold,
The development theory he knew to be true,
And by deep cosmological knowledge he told
That the spheres when first formed were excessively few.

Heraclites, that sage was no myth to his mind:
In currents dame nature conceived, was his view;
The father of all was the struggle of kind,
Perpetual change making everything new.

Empedoclese taught accidental conjuncture
Of forces which act and react, was the cause
Of the first germs of life on this globular structure,
Which slowly developed by circular laws.

That the forms which existed in ages of old
Were produced out of matter which never has rest,
And those which survived were the fittest, he told,
To exist in the future as being the best.

The conclusion he came to when study was o'er,
Was to "go it alone," as we say in this age;
Cut out a new road in the hybridist lore,
So that next generations might call him a sage.

So he set himself down to steady hard work,
To cross a large fowl with a suitable vine,
And he swore that his duty he never would shirk,
Until mind and matter did closely combine.

To come at this wonderful comical trick,
Of a miracle, chemical, monstrosity,
He thought himself hoarse, and he got pretty sick,
It haunted him so in the land by the sea.

The pollen he chose was the yolk of an egg,
Hard boiled and rubbed down into powder so fine,
That it looked like the stuff which sticks to the peg,
Or the style of a flower on which the bees dine.

A gourd was procured with a stamen whose cavern
Could swallow whole gravel and not mind the load,
Into this our scientist brushed in his pollen,
And waited results with the patience of Job.

To his joy one fine day at the end of September
He passed by his gourd on his way to his swine,
When he heard the "cheep, cheep," of a chick young and tender,
And he knew that it came from his hybridized vine.

To say that he sprang twenty feet in the air,
Would perhaps be a little o'erstepping the mark;
But surprise and confusion did raise up his hair,
And his sensitive organs gave him a rough jerk.

But collecting his senses and looking around,
He found that his brain-box had led him astray,
For the old "yallar" hen that was lost had been found,
Having made her a nest in the cool on the clay.

Like Jonah, she hatched in the shade of her vine,
And brought out her chickens in comfort and ease;
She never once thought of the science sublime
Which grows drumhead cabbage on root of sweet pease.

The man of deep thinking was awfully sold,
Kept dark on his plans for improving the race,
Lest his friends should combine, and turn him out in the cold,
And his enemies give him a much warmer place.

MORAL.

Stick closer to nature, you may then succeed
In developing something that's really some good;
But to cross a Shanghai with a pumpkin indeed,
Would produce wings and giblets, but next to no food.

NOTE.—Anaximander, who lived 625 B.C., assumed that out of infinity of matter through eternal revolutions, numerous world-bodies came into being as condensations of the air, and that the earth, too, as one of these world-bodies, issued out of a state originally fluid and afterwards aeriform. He also taught the theory that the earliest living creatures on the globe originated in the water from the action of the sun. From these creatures, later on, were developed the land-inhabiting plants and animals, which left the water and adapted themselves to life on dry land. Man likewise, gradually worked himself up from animal organism, and, in reality, from fish-like aquatic animals.

One hundred years later, Heraclites, of Ephesus, propounded the principle that a great uninterrupted process of development pervaded the whole universal world, that all forms are evolved in everlasting currents, and that struggle is "the father of all things," seeing that nowhere in the world exists absolute rest: that all standing still is but apparent; we are compelled everywhere to assume a perpetual change of matter, a constant variation of form. One form thrusting out its predecessor, the new usurping the place of the old.

Later on, Empedoclese, of Agrigent, in Sicily, assumed that the everlasting universal struggle was caused by the laws of attraction and repulsion of atoms. He also taught that purposive forms or organisms came into existence through the accidental conjunction of counteracting forces. Out of this great struggle the living forms now existing have issued victoriously, because they were best prepared for the battle, and therefore most capable of life.

FERTILIZERS FOR FRUITS.

The next topic on the paper was, "Best Fertilizers for the different Fruits; how procured and how applied."

MR. WELLINGTON being asked to introduce the discussion upon it, said: I might have to tell some of the tricks of the trade if I told all my experience in this matter. However, one of the best manures for fruit trees, and also for ornamental trees is our common wood ashes. We always use them when we can get them. We use them in connection with barnyard manure and some lime. We have experimented some with the fertilizers that are sold, and have never had results from them sufficient to warrant us in taking hold of them; and as long as we can get these old common ones we will not go outside of them.

MR. MORRIS.—For orchard purposes I think from 50 to 150 bushels of wood ashes to the acre would be a proper proportion. The ashes should be unleached; it is the potash we want. I believe the use of unleached ashes has a tendency to check mildew.

A MEMBER.—Do you apply it annually?

Mr. Morris.—You might apply it annually in small doses.

Mr. Hopkins.—As I said before, it is one of the tricks of the trade to get hold of the ashes. We manage to get hold of them yet.

Mr. Wright.—We make plenty of ashes and get them very cheaply, and once I wished I had not got them quite so cheaply, because I came very nearly killing my whole orchard with them. I applied them pretty liberally, and the first thing I knew they got all around the trees and came very nearly killing them. The man went and put a shovelful up against each tree instead of spreading them around as I told him. However, on clay soil there is nothing you can get so good as ashes with the exception of muck. You must not mix them with any manure whatever; if you do they eat up your other manure and spoil it entirely.

Mr. Roy.—I think one result of applying ashes is to keep down weeds.

Mr. Robertson.—I agree that we have no better fertilizer for fruit trees than ashes, but then we cannot get them. At least that is my experience. But I can tell you something we can get. I have found clay a good fertilizer for sandy soil; and I think you may just reverse that and use sand for clay soil.

Mr. Wright.—I have both clay and sand, and I use sand on my clay to loosen the soil and fertilize it; but I have to be very careful when I work the soil to get the two mixed or else the ground becomes hard. We have to avoid working the soil when it is very wet.

Mr. Reeves.—Bones are very soon softened by the use of wood ashes if they are kept moist.

Mr. Wright.—Hardwood ashes are far better than softwood ashes to reduce bones.

Mr. Slight.—Failing to get wood ashes, are coal ashes of any use whatever to the orchard?

Mr. Bucke.—Not the slightest.

The President.—I think they are of very little use—hardly worth putting on.

Mr. Croil.—Would it pay to buy ashes at, say, ten cents a bushel?

Mr. Wellington.—We find it would, and even to pay a higher price than that. I think you would find it very cheap manure at that price.

A Member.—I would like to know if salt would be of any use.

Mr. Arnold.—I know it to be a valuable manure some seasons in some soils, but it has to be used with considerable caution. Many years ago in experimenting I used salt on a field where there were almost all manner of things growing, and I know that if you used the same quantity of salt on the raspberry that you did on the strawberry the salt would do the raspberry good and kill the strawberry altogether. I once tried salt in the form of a weak brine to see whether it would kill mildew on grape vines, and I killed the mildew, but came very nearly killing the vines at the same time. I would be very sorry to recommend anyone to use anything like strong brine on grape vines. It is very beneficial to rose bushes, however, especially if the rose bushes are mildewed, along with tanbark or anything of that kind. It is my opinion that if the season is wet the salt is very beneficial, and if the season is wet the salt is not required so much—the value of salt appears to be due to its retaining moisture.

Mr. Roy.—Two or three years ago I had an animal that died. I had a heap of dung out in the field which I intended for the fall wheat. I had the carcass of the animal drawn out to this heap of dung, had a hole dug in the heap, and brought out a barrel of plaster of Paris. We sprinkled the animal all over with the plaster, and then put a lot of manure on it. We then put on more plaster of Paris, and afterwards heaped the manure up over the animal. In the fall when we were drawing out the manure we found the animal, bones and all, dissolved into pulp.

Mr. Weld.—A plan that I have seen adopted in Kent, in England, where the ground was very hard and stubborn, indeed almost like brick clay, was this: In the dry season of the year the clay was dug up, piled in heaps, and a fire was made with old rubbish for fuel. The dry clay was then gradually piled on top of the fire until a large quantity of it was burned through. In that way ground that was almost useless before the burning was rendered comparatively fruitful.

Mr. Reeves.—If the farmers here would in the summer season pile sods and rubbish

upon any old pine stump they may happen to have in the fallow, and then set fire to the heap, and will then draw what is left after the fire is out over the land, they will find that it is the best manure they can get. You very often find animals dying and getting killed around farms. If you will bury these in the neighbourhood of your apple trees or anything of that kind you will see the benefit of it in two years. In England we used to draw soot forty and fifty miles, and pay quite a price to get it for manure, and it is of great benefit. If you give your gooseberry and currant bushes a good dose of soot in the spring you will soon see the benefit of it.

Mr. Wright.—The soil of the valley of the Vercheres River, where I live, is clay on both sides. On one side is the *Brulé;* that is, the burnt country. The land there was left perfectly useless. I have burned pine stumps out of my own land too, and wherever I did so the land was as hard as a brick, and I would not give two cents for it.

FRUIT LIST FOR THE PROVINCE.

On the next question, "Should we have a full Fruit List for the Province of Ontario?"

The President said:—I think this question will be answered in the affirmative. I think we should have a fruit list for the northern sections, and one for the southern sections.

Mr. Arnold.—There should be a fruit list; but I think it is folly to talk of one list that should apply to all parts of Ontario. No one list would do for the whole of the Province. We should pass a resolution instructing our members from the northern parts of the Province to bring in a list of the fruits that would do for their sections, and those members from the southern parts to bring in a list of fruits that they could grow, and then we would have a list that would be reliable.

Mr. Gott.—My idea of a model fruit list is the one of Michigan. It is a record of the names of each of the fruits in the several departments, with their qualities, their times of ripening, and a sort of a little history of each. Provided this is our idea of a fruit list, the question how to get it is a very important one. In their list they have divided the State into three sections. The value of the fruits is determined by the delegates from those sections, and the fruits themselves are voted upon in council, and according to their exceedingly high value or low value they are "starred," the number of stars being proportionate to the value put on the different varieties.

Mr. Beadle.—Our good friend Mr. Wright, who lives at Renfrew, asked me to submit to this meeting a question that he would like to have discussed. He said he wanted to get information with reference to the best mode of preserving his trees—preventing them dying, as near as I could understand him, from cold. The trees up there catch cold, and get sick, and die. Now, I do not believe there is a man on the floor of this house who knows half as much about the matter as Mr. Wright does himself, and I should like to hear from him.

Mr. Hopkins.—Before this is acted upon I would suggest that we introduce in connection with it number ten upon the programme, as it bears upon that point, "The Cultivation of Orchards."

The President.—It is understood then that we take up cultivation, which is very closely allied with the subject we are treating of.

Mr. Wright.—I think that this matter of protection to plants which are almost hardy enough for our section is one which would be interesting to any person almost. I have tried protection, and so have many of my neighbours. The first experiment that I made in it was with a rose-bush which I considered tolerably hardy. I turned a box over it, and in the winter it got covered with hoar-frost, and in the spring it was dead. My neighbours told me that they tried barrels in the same way, and their roses also were dead in the spring. Then I tried to collect what trees would grow in that district; but when I went to the Ontario Government and tried to get a list I could not get any, and had to go to Minnesota, Michigan, and to my friend Dr. Hoskins, in Ver-

mont. Now, I think it is very desirable that we should have a list. In the Province of Quebec they have one, and they revise it every year. We might do the same thing here. Each agricultural society in the Province might furnish a list at each annual meeting. If each county would go to work in that way, and have a list, and revise it from time to time, as they found new varieties coming up, I do not see why we should not have a list that would apply to every part of the country, so that those who were just starting out in the business would know exactly what to buy. It would be desirable, in giving in the lists of fruits, to state not only the varieties but also the latitude and the altitude at which they are grown, and also whether situated near water or not. After I found these things out from my friends in Minnesota and Vermont, I had my man make wisps of hay with which I bound my trees, and in the spring, after unwinding these off the trees, you could see a spiral mark around each tree; the parts that the straw had touched were black. I had nearly destroyed my trees in this way. I had two Duchess of Oldenburg beside each other. I stood a lot of cornstalks around one of them, and in the spring for some reason that tree was dead, while the other tree which I had not protected at all was perfectly alive and grew as well as any tree in my orchard. My grape vines I protected with the clay soil that was close to them, and I found that that was not the thing at all. If you had a very dry fall and you put the clay on the grape vines it worked all right and protected them well; but if you happened to have a wet fall the clay was cold, and killed your vines entirely. So I had to desist from the use of the clay soil; but if I used muck the vines came out all right. I then bought a Flemish Beauty pear tree, and tried to protect it with straw. I put straw all around it; but the wind came in a circle around this tree and blew the snow away from it, and during the winter the frost penetrated into the ground and killed the tree completely. Another experiment which I tried with an apple tree. I planted apple trees near one corner of a little building which I had, and could not get them to grow at all. Discovering that the wind was taking the snow away from them I got some boards and put them around the trees to a height of about three feet and extending about sixteen feet in each direction, and the snow filled in there and protected the trees so that they lived. My soil being clay I have to avoid allowing the roots to go down into it to any depth. I try and plant my trees up as near to the surface as I can, and endeavour to get the roots to go out in every direction instead of going down deep into the soil. To prevent the roots striking too far down I get a pine tree about three feet in diameter and saw planks off it about three inches thick, and put these under my trees. In this way I get the tree to live. If you allow the roots to go too far down they are torn apart by the heaving of the frost. Another precaution that we have to take is never to work the soil in the fall. We try to get our trees to grow as early in the spring as we can, and to prevent them as much as we can from growing in the fall. If we let them grow in the fall the wood is not matured, and the early frost injures the trees.

The PRESIDENT.—Will you kindly give us the names of the apples that succeed well with you?

MR. WRIGHT.—Here is my list of five, revised up to the present time. First of all the Wealthy, next the Duchess of Oldenburg, next the McIntosh Red, next the Peach of Montreal, next the Yellow Transparent. I know that all these that I have are true to name. If you really get these varieties there is no doubt that they will grow in a climate where the mercury falls to from 36° to 40° below zero.

MR. BUCKE.—Have you tried the Alexander?

MR. WRIGHT.—I have tried the Alexander, but have not fruited it yet. I would not like to recommend a tree until I have fruited it four years. The difficulty is to get trees to mature their wood early enough in the fall.

The PRESIDENT.—What varieties of grapes have you that ripen with you?

MR. WRIGHT.—The Pocklington came quite near ripening with me last year, but did not quite. Moore's Early, I think, is going to ripen there. The Agawam ripens there; so does the Concord; and so does the Champion of course. And I may say that we grow the Champion in preference to almost any other grape in our locality, because it is a thrifty and hardy grape, and we can sell it at ten cents. The Delaware ripens with us

too, and does tolerably well under ordinary circumstances; that is, if we have a favourable season.

Mr. Croil.—Will the Seeknofurther apple stand with you?

Mr. Wright.—No, nor the Talman Sweet either. The Red Astrachan will not succeed with us either, although it may promise to do so at first. Of Scott's Winter one-half grew with me and the other half died. That may succeed in our locality, but I am not sure whether it will or not.

The President.—Some time in October I received from Sault Ste. Marie some fine specimens of the Duchess of Oldenburg, showing that they are even succeeding in that district with that variety.

Mr. Roy.—I was in Montreal about four years ago, and saw this Peach Apple in a small garden, and a most beautiful apple it was. It took my attention at once. I had not seen it in Ontario at all, so I made arrangements to have some scions of it sent up to me, and I have got them in trees now. It will be an acquisition to the apples of Ontario.

Mr. Wright.—I would not advise anyone to grow it who can grow other apples to any extent, because it does not keep—it will bruise easily, and it shows its bruises very much. The McIntosh Red is a magnificent apple with us. It keeps a long time.

Mr. Arnold.—I was going to ask Mr. Wright if he had ever tried to get apples worked on the Paradise stock. My experience of apples is that there are some varieties that will grow hardy on the Paradise stock that will be tender on seedling stocks.

Mr. Wright.—I was not aware it made any difference what kind of stock you grafted on. I thought it was the graft that made the difference.

Mr. Roy.—I believe it is conceded that a hardy stock will have an effect upon the scion that is put into it.

Mr. Morris.—A better plan would be to grow the hardy varieties for these cold sections, and to graft with a long scion on pieces of root about two inches long; plant these deep, and the scion will then throw out roots that will be as hardy as the top.

The President.—It would benefit Mr. Wright's locality very materially if he would sow some seed of hardy varieties and raise some seedlings. When I was at Saulte Ste. Marie, three or four years ago, I found that a gentleman there had raised some varieties from seeds of the Fameuse, that would stand the climate when Fameuse died out. The seedlings were not as good as the Fameuse itself, but were really very good. I think that the way in which we must look for hardy varieties for our cold countries is to raise the trees from seed. The seed having been subjected to the cold, produces plants which are hardier than the parents from which the fruit producing the seed was obtained.

Mr. Wright.—I am working now in connection with the Renfrew Fruit and Flower Association, in the County of Renfrew, and in Arnprior. I have no interest in those people myself, but am merely working with them to try to get hardy seedlings; and the way they do is, to go around to the seedling orchards in the fall, and find out which are the hardy varieties. We have now one very promising variety. It originated on the Calumet Island, and we have called it the Calumet apple. Nearly all of our hardy varieties are fall apples. This apple that I speak of will keep until the following spring, and it is a beautiful apple; but the difficulty is that we do not know whether it is hardy enough or not, because, growing on that island—although it is twenty-seven miles north of us—it is surrounded by water. They have something over twenty varieties of seedlings, which they are growing now in Arnprior, and which we think will be very valuable indeed.

Mr. Beadle.—If this apple that you have just spoken about, is of such good quality that you want, if possible, to grow apples like it, I would advise you to sow the seeds of it in your locality. If you do, you will be very likely to get some good long-keeping varieties from it that will be hardy. I have experimented in that direction for a good many years, and I am perfectly satisfied that the principle is a true one; that if you take a tree from a more southern locality and bring it into a section where it will barely live, but you can get it to live long enough to produce fruit, and you then sow the seed of that fruit, it will produce a tree hardier than the parent tree. The stock does not make every variety enough hardier to make such a great difference; but if you happen to get a variety that is almost hardy enough—Red Astrachan, for example—it may be

that you will find that the stock will cause the branches of the summer growth to ripen up early, and when they ripen up their wood to the extremity and form their terminal buds, they generally live through the winter.

Mr. Roy.—Raising apples from seed is a very slow process. I had about fifty trees that I sowed the seed of, and there are only about four or five, or perhaps six, samples of seedlings there now. That is all that I got out of the fifty trees—all that I retained, and that were good for anything.

The President.—You want to grow a large number and select from them.

Mr. Dempsey.—I am afraid Mr. Wright might be disappointed if he grew his trees on the Paradise stock. I have tested a number of varieties upon it. There is one sent out which is grown from the seed by Mr. Rivers, of England, that is a little hardier than the others. I have found one variety of apples which is quite tender on the Paradise stock, but, which grafted on the original stock, appeared to be quite hardy. The only way I can account for that is, that the Paradise threw out such a number of fibrous roots near the surface that the light rains that begin to come in the month of September are quite likely to cause a partial second-growth, and they are too often poorly prepared for the severity of the winter.

Mr. Morris.—I would recommend taking the seedlings when they are one year old and grafting them into larger trees. You would have the fruit then in two or three years and be able to see whether it is good or not.

Mr. Slight.—I have had a little experience in the north; and, to give it a very short form, I will picture to you two fruit trees I have my eye upon, which I have watched closely for some years back. There is one, the owner of which is a very active man, who gathered all the information he could, and tried his very best to work upon it. He cultivated and did his utmost to have a good, successful orchard. He was, at the time I speak of, and is now, about discouraged. Another man beside him took a very easy way to grow an orchard. He has left it growing in grass, and every year, in the spring time, he scatters a light covering of ashes around each tree, and that keeps the grass down. He does no cultivation whatever in the orchard. He grows his trees very low, and when the fruit is on them, you can hardly get through the orchard. The trees are loaded. He has a shelter-belt on the north side of his trees. The result is that, whereas his neighbour near him has failed entirely with the best cultivation, he has had the greatest success with very little cultivation. He rather favours planting the orchard on a northern slope, in preference to putting it on one facing to the south, or south-west. I have found a great many orchards in that section which were facing somewhat to the south, and invariably I found that in them the trees in the spring time thawed out most on the side next to the sun, and the prevailing winds being from the south-west, I found in a great many cases that trees would become black—scorched, as it were—on the south-west side where the mid-day sun struck them, and in four or five years be entirely destroyed.

Mr. Wright.—We invariably choose a northern slope, and the higher it is the better, because the frost does not strike it so soon.

It now being half-past five o'clock the Convention took recess until half-past seven. During the ensuing evening session quite a number of visitors, ladies and gentlemen, were present, and appeared to take considerable interest in the discussions.

PACKAGES FOR APPLES.

The first topic discussed was "The Best Size and Form of Package for Apples for foreign shipment."

Mr. A. McD. Allan.—I have never used any package except the one, to any extent; that is, the well-known apple barrel, supposed to hold two bushels and three pecks—in reality I suppose the majority of them, when they are properly packed down, hold as close to three bushels as possible. I have tried boxes holding one bushel apiece. I have sent

out circulars to the old country asking as to the different packages, and the majority of the replies are to the effect that they prefer the Canadian half-barrel, as they call it, to any package that is sent across as long as it is air-tight. I contemplate a change in the barrel that we have been using. That is, to employ a barrel with scarcely any bilge at all. The less bilge there is in a barrel the better. We find that when the bilge is large the apples in the outside of the centre of the barrel are more or less bruised in the rolling of the barrel, in the dumping of it, and in the storing of it away in the hold of the vessel. My idea is to have a barrel with staves that are almost straight, and with large quarter hoops, and if possible, a bevelled quarter hoop so that in rolling the barrel the weight will come on the quarter it is rolled on. At one time I thought of using a new sort of barrel which was manufactured by a Guelph company out of whole wood of the same style as the cheese boxes. The idea of such a barrel was that it was going to roll on the top and bottom hoop. But I do not think that would answer as well as one of the sort I have referred to. I think the common barrel, on the whole, is going to suit as well as any, and it seems to take as well. The opinion of the dealers in the old country seems to be in favour of it. Several extensive firms in London, England, complain of too many of our barrels having too large a bilge. I believe if a company could be formed for the purpose of packing in sufficiently large quantities, who would place a pad of very fine marsh grass in the bottom and top of each barrel, and then fill up the barrel with medium sized Northern Spys, well coloured, they would find that apples so put up would take about as well in the English market as anything going. Each apple should be folded in a piece of tissue paper and then packed in fine oat chaff, with chaff between the outside apples and the barrel. I think it would pay shippers to use a more expensive barrel than we have been using in the past. I believe that in the European market they are perfectly willing to pay for a neat, good package.

Mr. Beadle.—The United States is a foreign market; and perhaps some of our shippers would prefer to send their fruit to New York city. I was recently conversing with a gentleman who has been in the habit of sending choice fruit there and to Boston, and he told me he always sent choice fruit, if it was apples, in half-barrels—if pears in bushel boxes. He says he can get more money for a half-barrel doubled, making it a barrel, than he can for the same quantity of fruit in a barrel. He also corroborates what Mr. Allan says, that—within certain limits, I suppose—you cannot make your package too neat, and tidy, and attractive looking, apart altogether from the quality of the fruit. Do not send to those markets an old barrel that has been used for something else, or a cheaply-made barrel, but a strong, tight, well-made article. Then if your apples are such as Mr. Allan has described, wrap them in tissue paper; he says if it is coloured tissue paper, all the better. He always wraps each pear in tissue paper, and labels the package on the outside with a neat piece of paper pasted on. This label is neatly got up, and is attractive looking, and the name of the fruit is written on it. There are also labels on the apple barrels having the name of the fruit written on them and the name of the party sending them printed on. He says that by sending your fruit in this nice, tidy shape to market you will get a considerable percentage more for it than you can get for the same fruit put up in a less tidy form. When I came into his office he had just opened a letter giving the returns of four half-barrels of Lady apples that he had sent down. They had sold one of the half-barrels for eight dollars. I suppose it was about Christmas time when a pretty, attractive little apple was wanted for table decoration. For a package of Beurrè d'Anjou pears got up in this nice style he got five dollars.

Mr. Wellington—I received from Nova Scotia to-day a newspaper report of a meeting of the Fruit Growers' Association there, in which I notice a communication from Mr. Frederick J. H. Axford, who it seems has put up apples for the English market, and who succeeded in taking a prize offered by a London firm for the best way of packing ten barrels of apples. He says:—

"Sir,—According to the requirement by advertisement for competitors for prize offered by Nothard and Lowe, of London, England, for best ten barrels of Ribston Pippins, I forward you a brief statement of my method of packing and marking apples for market.

"*Picking.*—The fruit is hand-picked from off the trees singly and carefully into

baskets which are carefully emptied into apple barrels close at hand in the orchard (excluding all wormy fruit, to prevent good fruit being defaced by the worms in fruit bin). Thence they are taken to the fruit room, and carefully placed in the fruit bins, where they are allowed to sweat and remain until required to be put up for the market.

"*Packing and Marking.*—I secure, if possible, air-tight barrels, believing that the more the air is excluded from the fruit the better it will keep anywhere, and especially as freight in a vessel. Having obtained the barrels, I number the bottom and sides before I remove the bottoms, to secure the right ones when heading up. I then nail the heads and bilge hoops securely, taking care that no nail points are exposed inside the barrel. I then place a thin layer of excelsior shavings inside on the head of the barrel, line it with white paper, placing same upon the excelsior, and proceed to pack the fruit, marking in pencil the intended quality on each barrel, to avoid any mistake when labelling. When sorting fruit I choose some of the brightest and best for heading with, so that when it is opened it may appear desirable, and ask to be poured out for inspection. I lay the first two layers of fruit with the stems down (they show up when the barrel is opened), placing them in tightly, after which I carefully put in the best from the basket, putting in perfect fruit in form and of uniform size, for the first quality; shaking the barrel occasionally that the fruit might settle. When full I put in some of smaller size to fill up the spaces, and place a layer of white paper over all, before I put in the bottom of the barrel, or as it is termed, head up, which operation I perform with the screw header (M. C. Bacon's, Falmouth), which took the prize at the Kentville Exhibition, where I bought it. Having got the bottom in place through steady pressure and gentle tapping of sides of barrel all round, and otherwise shaking the barrel to get apples solidly in place, I put the hoops on and secure by nails, using stout shingle nails for bottom hoops, and either large tacks or small lath nails, as the hoops may require, for the bilge. After which they are marked by stencil plates, with the name and quality of fruit, name of grower, and locality of growth, and forwarded to market, seeking for as good a price as is going.

"I am, sir, yours truly,

"Fred. J. H. Axford."

Mr. Morris.—A plan that I have thought would be well for the fruit growers to adopt would be for them to provide themselves with boxes, each of about a size for two men to carry, with a handle on each end. These could be made out of five-eighths of an inch lumber, or something about that thickness. When the apples were gathered from the trees they could be put into these boxes, and carried into the barn in them, and in this way the fruit would require less handling than it generally receives, besides which it would be all ready for shipping.

Mr. Dempsey.—We ship pears a short distance. Montreal is the farthest we have ever sent them. The most profitable package we have ever used is the three-half-peck basket—just the ordinary peach basket—not the old style, but those with a handle on top like a market basket. We sort our pears for every basket uniform in size as far as possible, and cover the fruit with a cloth which I think they call tarleton, so that you can readily see the pears through it. Our pears this year brought us a dollar and a half for each three half-pecks, that is, a dollar a peck. I mean that we realized that at home. If we had packed them in barrels we would not have got that price. In shipping apples I have found the same difficulty that Mr. Allan has been speaking of—that where there is much bilge to the barrel the fruit does not arrive in England in such a good condition as it does when packed in barrels that are almost straight. I had been at a loss to know why that was the case; but Mr. Miller, a very large shipper of the Early Canada, says that when he has shipped apples in large barrels the rubbing of the barrels together in the ship has actually worn the staves through by the time they arrived in England. If the apples happen to be packed so that they are a little loose, or if they happen to shrink a little after being packed, the apples roll in the barrels themselves, and the consequence is that when they arrive in England every apple is discoloured. I fancy that if we can get a barrel nearly straight—I would not want it perfectly straight—this difficulty would be nearly overcome. With reference to packing, I never saw a system work as well as this:

To have a table in the orchard, one which can be easily moved, and which has some soft cloth on it, and have the pickers empty the apples on this table, and then sort them on it into uniform sizes. The table should be about twelve feet long, and of a width which will admit of its being reached across. When apples are sorted in this way, medium sized ones will bring about as much as the large ones. Sometimes we have got more for Northern Spys that were of medium size than we have for large apples of the same variety. When we are sorting the apples we can have the barrels into which we are putting them standing beside the table. One word in opposition to the packing in tissue paper. If we could maintain the same temperature in the fruit until it arrives in the market that it has when the apples are rolled up, there would be no difficulty whatever. But supposing the apple is cooled when the paper is put on it, and it is moved into a temperature which is very much warmer, as it generally is when it goes in a ship, particularly when it is beside a boiler, a certain amount of moisture comes from the apple and makes the tissue paper adhere to the fruit, and this has a very injurious effect on it. I fancy that if we would send our apples over to England in any shape in which they would carry nicely, and then have very small and nice packages there, and persons to sort our apples and put them into those, we would do well with them. This practice is about to be introduced into England this coming season by Macaulay & Miller, of our county. One member of the firm intends going to England to repack all the apples into small packages when they arrive there, so as to have none of the slaughter market business. The way apples are sold over there now is to open a barrel, and to auction the lot off by that sample; and if that particular barrel happens to have some defect about it which the others have not, there is a loss on the whole consignment. A certain amount of moisture comes through the skin of apples, some call it sweating, and this is what causes them to shrivel.

Mr. Roy.—And you will find when the sweating process is going on the apple has a kind of oily feeling.

Mr. Dempsey.—I think that allowing them to stand in the barrel until they get a temperature uniform with that of the surrounding atmosphere will prevent this sweating, which I think is very injurious. I think that lining apple barrels with paper has a beneficial effect. Sometimes we get orders for apples late in the season. I had some apples that were frozen-in a couple of years ago in the St. Lawrence. The last ship that started out got stuck fast. Fortunately I had lined the barrels in which they were contained with paper, and those apples afterwards arrived in perfect order, and brought handsome prices. The lining of the barrels with paper prevented them from freezing.

Mr. Wellington.—I am inclined to take exception to the plan of the last speaker of leaving the apples in barrels very long after they are picked, especially if the weather should be very warm, because there would be danger of their ripening too much. I have tried that and found them to ripen very rapidly, and the result was that they were not in as good a condition for keeping. They got too ripe before shipping, and were injured in that way. I think it is far better, unless the weather is quite cool, that they be turned out where there is a free circulation of air. I think they will ship better.

Mr. Dempsey.—I heard considerable in Michigan from the people there upon this subject. The majority of them advocated the building of a fruit-room convenient to the orchard, and recommended that as quick as the fruit was put up in the barrels it should be removed to that room. Their fruit-room was generally built of wood, with a double wall having a space in it of about three feet in width, which they would pack full of straw. Where they had sawdust they left a space of about a foot and a half which they packed with sawdust. Every cold evening they would open the doors, and let this room cool, and early in the morning the doors, which were double, would be closed. By this means they got enough cool air to cool their apples off, and the fruit was then ready to be packed for shipping.

ORNAMENTAL TREES AND SHRUBS.

Mr. Wellington submitted the report of the Committee on Ornamental Trees and Shrubs, as follows:

ORNAMENTAL TREES AND SHRUBS.

To do the subject under consideration justice would require volumes of space, extensive information, and an ability in weilding the pen which the writer does not feel possessed of. Little more can be done in an article of necessary brevity but give a simple classification of ornamental trees and shrubs best suited to Canada. This is itself difficult, because in Canada we have so many and totally distinct climatic influences to contend with that what will succeed in one section will be uncertain in another where there is apparently little difference in climate. Every part of the world has its characteristic vegetation, depending to certain extent upon climate and soil, but probably more upon other causes, which has been variously explained by different investigation. In this short article we can only speak of facts as we have found them, with little speculation as to the agencies which have operated to bring them into existence. We find that plants are not by any means distributed or confined, in a wild state, to localities best suited to them, or where alone they will flourish. Frequently we find that plants attain a development unknown in their natural state, when conveyed to a distant part of the world possessing a similar climate. This we think may be attributed in a great measure to freshness of soil, and it will not surprise us if in the near future many trees and plants which have been grown with indifferent results in Canada will attain almost perfect success in our great North-West.

In Australia many of our common weeds were introduced with grain and cereals, and in many instances where they escaped beyond the limits of cultivation, they took complete possession of the soil to the total expulsion of the native vegetation. In course of time the vigour of these introduced plants diminished, and they were gradually reduced to more equal terms with the native plants. This fact supplies a valuable hint to the cultivator respecting the importance of change of soil, and explains the relative fertility of freshly broken land. It is gratifying to learn that not only have the tastes of the people led them to plant more extensively each year of ornamental trees and shrubs, and the demand for beautiful trees and shrubs is ever increasing, but that the efforts of the importer, hybridizer and propagator have been productive of such success. It is only within a few years that we have had that most beautiful of climbing plants—the Clematis; and how many of us can remember when the only Pæonia known was the old-fashioned red, known as the Piney, which though brilliant in hue, and fine in size and appearance, was enchanting only at a distance, for its distasteful odours condemed it to such an extent as to almost drive it from our gardens. Now, however, we have Pæonias almost as numerous and many-coloured as the rose, and with perfume so delicate as almost to rival that queen of flowers. And to a greater or less extent has this improvement gone on through the whole list of ornamental trees and shrubs. Every country has given us of its handsome trees and shrubs, until we now have a list that should please the most fastidious. Japan furnishes us with beautiful Deutzias, Hydrangeas, Pyrus Japonica, Kerria, Forsythia, various species of Clematis, etc., etc. Siberia and Northern China give us Kolreuteria faniculata, Ailanthus, and many untried recent introductions. Asia Minor contributes Rhododendron Ponticum, and North America and the mountains of India are the native countries of most of the other cultivated species of this beautiful genus. The majority of the coniferous trees that are hardy come from our own continent and Japan. The gigantic Sequoias, the stately Piceas and Abies, and many species of Pinus, together with some of the handsomest of the Cuprèssidæ.

Without further digression we will come back to the point indicated at the beginning of this article, and enumerate under three heads the best ornamental trees and shrubs for Canada.

DECIDIOUS ORNAMENTALS.

Acer—*Maple.*

English or Cork-barked.—A native of central Europe. It is a slow growing stocky tree, of compact, roundish habit, with corky bark and small handsome foliage; hardy and very ornamental.

White or Silver-leaved Maple.—A North American species, of large growth, large size, and irregular rounded form; foliage bright green above and slivery-white beneath; tree very hardy and easily transplanted; where immediate shade is required, one of the most useful trees; also a favourite street and park tree.

Weir's Cut-leaved Maple.—A silver maple with remarkable and dissected foliage. Of rapid growth; shoots slender and drooping, giving it a very graceful appearance.

Norway Maple.—A distinct foreign variety, with large broad leaves of a deep green. Probably the best maple in cultivation.

Curled-leaved Norway Maple.—A curious variety of the above, with leaves the lobes of which curl and turn inwards, giving the tree a novel and distinct aspect.

Reitenbach's Norway Maple.—A promising new variety with dark purple leaves in spring. In summer and autumn the leaves have a faint purple tint.

Schwedler's Norway Maple.—A beautiful variety, with young shoots and leaves of a bright purplish and crimson colour, which changes to purplish-green in the older leaves. It is a great improvement on the well-known Colchicum rubrum; the foliage being much brighter and the growth more vigorous.

Japan Maple (polymorphum).—This is the normal form or type; growth slow and shrubby; foliage small, five-lobed, and of a bright cheerful green in spring and summer, changing to a lovely dark crimson in autumn. Apparently perfectly hardy. One of the most beautiful and valuable of small sized trees.

Japan Maple (sanguineum).—Of dwarf habit and rounded form; foliage five-lobed and serrated; reddish crimson in June. A charming variety and one of the best of the Japanese maples.

European Sycamore Maple.—From Europe. A handsome tree of rapid and upright growth, with large foliage and smooth, ash-gray coloured bark.

Purple-leaved Sycamore Maple.—Tree of fine robust habit; foliage deep green on the upper surface, and purplish red underneath. Produces a fine effect planted with golden-leaved trees.

Golden-leaved Sycamore Maple.—Recently introduced from Hamburg, Germany. In spring the foliage is of a golden yellow colour, which changes to a duller shade as the season advances. The young growth continues brilliant throughout the summer. A valuable and effective variety for grouping with purple-leaved trees.

Red or Scarlet Maple, Red Bud Maple.—A native species of medium size and rounded head, produces deep red blossoms, which appear before the leaves. In autumn the foliage changes to brilliant scarlet, rendering the tree very conspicuous. At the south the seeds assume gorgeous tints.

Alnus—*Alder.*

European or Common Alder.—A tree of rapid growth, suitable for damp soils, but thriving well everywhere.

Cut-leaved Alder.—From Northern France. A very ornamental variety, with dark green and deeply serrated foliage.

Imperial Cut-leaved Alder.—A very striking and beautiful tree, with delicate and beautiful cut-leaves; hardy and of vigorous growth; one of the finest cut-leaved trees in cultivation.

Linden-leaved Alder.—An ornamental species of medium size, with large, handsome, cordate, dark green leaves, very distinct.

AMELANCHIER.

Botryapium.—An American species known as "June Berry," "Wild Pear," "Service Tree," and "Shad Blow." Grows thirty to forty feet; of fastigiate form; flowers white, produced in great profusion early in April, succeeded by a small fruit of purplish colour, ripe in July, and pleasant to the taste. One of the finest very early flowering trees; not appreciated as it should be.

Ovalis, oval-leaved Amelanchier.—A native of North America. When grafted five or six feet it makes a very handsome round-headed small tree; has bright scarlet berries in the fall.

AILANTHUS—*Tree of Heaven.*

Glandulosa.—From Japan. A lofty, rapid-growing tree, with long feathery foliage; exempt from all diseases and insects. One of the most distinct of ornamental trees with pinnate foliage.

ALMOND.

Large Double Flowering.—A vigorous, beautiful tree, covered in May with double rose-coloured blossoms, like small roses.

ŒSULUS—*Horse Chestnut.*

Trees of elegant habit, magnificent foliage, and fine large spikes of flowers in May and June.

European or White Flowering.—A very beautiful well-known tree, with round dense head, dark green foliage, and an abundance of showy flowers in early spring.

Double White Flowering.—A superb variety with large spikes of handsome double flowers.

Red Flowering.—Not so rapid a grower as the white; foliage of a deep green, and blooms late. A very showy tree.

BETULA—*Birch.*

European White Weeping.—A graceful tree, of moderate size, with silvery bark and slender branches. Quite erect when young, but after four or five years' growth assumes an elegant drooping habit, rendering the tree very effective in landscapes.

Pyramidal Birch.—Silvery white bark, with elegant pyramidal habit like Lombardy Poplar.

Purple-leaved Birch.—A variety possessing the vigorous habit of the birches, and having purple foliage.

Cut-leaved Weeping Birch.—Beyond question one of the most popular of all weeping or pendulous trees. Its tall, slender, yet vigorous growth, graceful drooping branches, silvery white bark, and delicately cut foliage, present a combination of attractive characteristics rarely met with in a single tree.

Young's Weeping Birch.—This variety is of a beautiful pendulous habit, with long slender shoots of picturesque form. The leaves are broad, almost heart-shaped, and very pretty. As a small weeping ornamental tree it has no equal. It is a decided acquisition.

CARYA—*Hickory.*

Shell-bark Hickory.—The most ornamental and valuable of the genus. The nuts are whiter and shell thinner than those of other species.

CASTANEA—*Chestnut.*

Sweet or Spanish.—Originally introduced from Asia Minor into Europe. A valuable species both for ornament and fruit. It forms a handsome lawn tree, and produces much larger fruit than the American variety.

American Sweet Chestnut.—Among our large collection of ornamental native forest trees, the chestnut is unrivaled for its beauty. When grown in the open ground it assumes an elegant symmetrical form. The foliage is rich, glossy and healthy, and the whole tree is covered in early summer with long pendant tassel-like blossoms, than which there is none more graceful and beautiful. It is especially desirable for its nuts, which it bears profusely a few years after transplanting. The chestnut thrives well on any soil except a wet one. When nursery grown, bears transplanting well, and when once established is a rapid grower, and soon comes into bearing.

CATALPA.

Speciosa.—A variety originating at the west. More upright and symmetrical in its growth than the common Catalpa (syringæfolia), and blossoms two or three weeks earlier. Very valuable for timber, fence posts, railroad ties, etc.—possessing wonderful durability. A very ornamental and valuable tree.

CERASUS—*Cherry.*

Dwarf Double Flowering Cherry.—A variety of the Morello with double white flowers.

Ever Flowering Weeping Cherry.—A fine drooping variety that bears fruit and flowers all summer.

Large Double Flowering Cherry.—At the period of flowering a remarkably beautiful and attractive tree. The flowers are so numerous as to conceal the branches, and present to the eye nothing but a mass of bloom, each flower resembling a miniature white rose. A valuable variety, deserving of wide dissemination.

Japonica rosea pendula.—Brought from Japan by Von Siebold, and is certainly one of the finest pendulous trees for the lawn or small grounds. The branches are slender, and fall gracefully to the ground, and the flowers are rose coloured. Undoubtedly one of the finest weeping cherries.

Dwarf Weeping Cherry.—Very delicate drooping branches and tiny leaves and flowers.

CORNUS—*Dogwood.*

White Flowering Dogwood.—An American species, of fine form, growing from sixteen to twenty-five feet high. The flowers produced in spring before the leaves appear, are from three to three and a-half inches in diameter, white and very showy. They begin to appear just as the Magnolia flowers are fading, and are invaluable for maintaining a succession of bloom in the garden border or on the lawn. They also are very durable, lasting in favourable weather more than two weeks. Besides being a tree of fine form its foliage is of a grayish green colour, glossy and handsome, and in the autumn turns to a deep red, rendering the tree one of the most showy and beautiful objects at that season. We regard it, all things considered, as one of the most valuable trees for ornamental planting, ranking next to the Magnolia among flowering trees, and only second to the Scarlet Oak, which it almost equals, in brilliant foliage in autumn.

Cornus Florida pendula.—Is a variety of the great Cornus Florida, which is itself known as one of the most beautiful of ornamental plants. It is admired especially for its large white floral bracts, which are succeeded by red berries as brilliant as the holly, while in the fall the deep red foliage is one of the chief elements in our brilliant autumn scenery. A weeping variety of such a splendid plant would alone be a grand addition to our lists, even though it had to be grafted on tall stems as other weeping plants are.

But this beautiful plant has one advantage in which it stands alone among weeping trees: while every branch is heavily pendulous, the leader ascends straight as an arrow, and makes a plant which charms everyone by its regular beauty, so unusual in weeping trees. It has this further peculiarity—the branches are thrown out in pairs, at regular intervals, and on each side directly opposite each other, and the branches next above growing so as to droop exactly between those below. It possesses the perfect hardiness of the Cornus family, even the tops of the limbs and terminal buds passing through the severest winter without injury.

The whole stock and control of this splendid addition to the list of ornamental trees was bought by Messrs. Stone & Wellington, of the Fonthill nurseries, of Mr. Thomas Meehan, the well-known editor of the *Gardener's Monthly*.

Cratægus—*Thorn.*

Double Scarlet Thorn.—A fine variety; flowers deep crimson, with scarlet shade; very double, and considered larger than the double red; fine, rich foliage.

Paul's Double Scarlet Thorn.—This is a new sort, and the best. Flowers are in cluster like verbenas; are very double, large, and full, and of a deep rich crimson.

Double White Thorn.—Has small, double white flowers.

Weeping Scarlet Thorn.—This variety, grafted standard high, forms pretty drooping heads. The branches are slender, and hang gracefully towards the ground; flowers crimson; unique and beautiful.

Fagus—*Beech.*

Fern-leaved Beech.—Of elegant round habit, and delicately cut fern-like foliage. One of the finest lawn trees.

Cut-leaved Beech.—Foliage deeply and finely cut.

Weeping Beech.—Originated in Belgium. Remarkably vigorous, picturesque tree, of large size. Its mode of growth is extremely curious. The trunk or stem is generally straight, with the branches tortuous and spreading. Quite ungainly in appearance divested of their leaves; but, when covered with rich, luxuriant foliage, of wonderful grace and beauty.

Purple-leaved Beech.—A remarkable species with deep purple foliage, changing to greenish purple in autumn. A very striking contrast with other ornamental trees.

Fraxinus—*Ash.*

Acuba-leaved Ash.—A native tree, growing from thirty to fifty feet high; flowers in May.

European Ash.—A lofty tree, with pinnate foliage and spreading head.

Golden-Bark Weeping Ash.—An elegant weeping tree; bark in winter yellow as gold.

Pendula Ash.—The common, well-known sort; one of the finest lawn and arbour trees. Covers a great space, and grows rapidly.

Juglans—*Walnut.*

Butternut.—A native tree of medium size, spreading head, grayish coloured bark, and foliage resembling that of the Ailanthus; nut oblong and rough.

Black Walnut.—Another native species of great size and majestic habit; bark very dark and deeply furrowed; foliage beautiful, each leaf being composed of from thirteen to seventeen leaflets; nut round.

KOLREUTERIA.

Paniculata.—From China. A hardy, small, round-headed tree, with fine lobed leaves and large panicles of showy, golden-yellow flowers, in the latter end of July; leaves change in autumn to a fine yellow. One of the most durable trees, particularly valuable for its brilliant, golden blossoms, which are produced so late in the season, when few, if any, trees are in full bloom.

LARIX—*Larch.*

European Larch.—An excellent, rapid growing, pyramidal tree; also valuable for timber; small branches drooping.

Weeping European Larch.—One of the most picturesque weeping trees. The branches spread and droop irregularly, assuming curious forms.

LIQUIDAMBAR—*Sweet Gum, or Bilstead.*

One of the finest American trees. Of medium size and moderate growth; form, round-headed, or tapering; leaves resemble somewhat those of the maple, but are star shaped, and of a beautiful glossy green colour in summer, turning to a deep purplish crimson in autumn; bark corky; beautiful in all stages of growth. It is particularly handsome and striking in autumn.

POPULUS—*Poplar.*

Lombardy Poplar.—A very distinct, well-known variety, of rapid growth, and tall, narrow form.

Weeping Tooth-leaved Poplar.—A variety of rapid growth, with long, slender branches, drooping gracefully to the ground; foliage large and deeply serrated; a fine weeper.

PYRUS—*Crab and Mountain Ash.*

Fragrant Garland Flowering Crab.—Single blush flowers, with the fragrance of sweet violets. Blossoms appear about a week after those of the Double Rose flowering; very desirable.

Chinese Double White Flowering Crab.—Double white fragrant flowers in clusters.

White Beam Tree.—A vigorous growing tree, with broad, distinct, fine foliage; young wood downy; fruit grayish brown. One of the best.

European Mountain Ash.—A fine, hardy tree; head dense and regular, covered from July till winter with large clusters of bright scarlet berries.

Weeping Mountain Ash.—A beautiful tree, with straggling, weeping branches; makes a fine tree for the lawn, suitable for covering arbours.

Oak-leaved Mountain Ash.—A variety with large, hoary, lobed leaves; distinct and fine.

QUERCUS—*Oak.*

American White Oak.—One of the finest American trees; of large size, and spreading branches; leaves lobed, pale green above and glaucous beneath.

Bicolor.—A native species, with handsome, large, sinuate, toothed leaves, which turn to a bright scarlet in autumn.

Scarlet Oak.—A native tree of rapid growth, pyramidal outline, and especially remarkable in autumn, when the foliage changes to a bright scarlet.

Mossy Cup, or Burr Oak.—A native tree of spreading form; foliage deeply lobed, and the largest and most beautiful among oak leaves; cup-bearing, acorn fringed and burr like; bark corky. One of the noblest of the family.

English Oak.—The Royal Oak of England and well-known tree of spreading, slow growth.

Purple-leaved Oak.—A magnificent variety, with dark purple leaves, which retain their beautiful tint the entire summer.

Golden Oak.—A new variety of great beauty. Leaves green, heavily shaded with a rich golden yellow. A most striking and beautiful tree on the lawn, and should be in every collection.

Cut-leaved Oak.—Tree of fine habit, and elegant, deeply cut foliage. One of the best cut-leaved trees.

ROBINIA—*Locust, or Acacia.*

Rose, or Moss Locust.—A native species, of spreading, irregular growth, with long, elegant clusters of rose coloured flowers in June, and at intervals all the season.

Black, or Yellow Locust.—A native tree of large size, rapid growth, and valuable for timber, as well as quite ornamental. The flowers are disposed in long racemes, white or yellowish, very fragrant, and appear in June.

Gum, or Rose Flowered.—A small native species; young shoots clammy; produces beautiful rose-coloured flowers in short racemes; very desirable for small places.

SALISBUREA—*Maiden Hair Tree.*

A remarkable tree from Japan, combining in its foliage characteristics of the conifer and deciduous tree. The tree is of medium size, rapid growth, with beautiful fern-like foliage.

SALIX—*Willow.*

Babylonian, or Weeping Willow.—A native of Asia. Our common and well-known weeping willow.

Kilmarnock Weeping Willow.—An exceedingly graceful tree, with large glossy leaves. One of the finest of this class of trees.

American Weeping. An American dwarf; slender, branched species; grafted five or six feet high, it makes one of the most ornamental of small weeping trees; more ornamental than the Babylonica.

Rosemary-leaved Willow.—Very distinct and ornamental, with long, glossy, silver foliage. Makes a striking and pretty small tree when worked standard high.

TILIA—*Linden and Lime Tree.*

American, or Basswood.—A rapid-growing, beautiful native tree, with very large leaves and fragrant flowers.

European Linden.—A very pyramidal tree, with large leaves and fragrant flowers.

White-leaved European Linden.—A handsome, vigorous-growing tree; large leaves, whitish on the under side, and having a beautiful appearance when ruffled by the wind.

White-leaved Weeping Linden.—A fine tree, with large leaves and drooping branches.

Golden-barked Linden.—A variety of medium size, with golden-yellow twigs; very conspicuous in winter.

ULMUS—*Elm.*

American White, or Weeping.—The noble, drooping, spreading tree of our own woods. One of the grandest of park or street trees.

Purple-leaved English Elm.—A striking variety, with erect branches and purple leaves.

Scotch, or Wych.—A fine spreading tree, of rapid growth; foliage large.

Camperdown.—Its vigorous, irregular branches, which have a uniform weeping habit, overlap so regularly that a compact, roof-like head is formed; the finest weeping elm.

Huntingdon Elm.—Of very erect habit, and rapid, vigorous growth; bark clean and smooth; one of the finest elms for any purpose.

Scotch Weeping Elm.—A vigorous, graceful weeping tree; branches somewhat marked with a persistent horizontal growth; again growing perpendicularly downwards; foliage large and massive.

We have omitted many fine varieties in each class, feeling that our space would not admit of a description of them also. Several fine species, such as Magnolias, Tulip trees, etc., etc., which will succeed in the extreme west and south-western portion of Canada, but which are not hardy enough for Ontario generally.

We now come to the coniferous class of trees, or evergreens; and one cannot but feel sorrow in having to leave out so many handsome varieties which are too tender for this country.

EVERGREENS.

Abies—*Spruce, Fir, and Hemlock.*

White Spruce.—A native tree of medium size, varying in height from twenty-five to fifty feet: of a fine pyramidal form; foliage silvery gray, and bark light coloured; very hardy and valuable.

Hemlock Spruce.—An elegant pyramidal tree with drooping branches and delicate dark foliage, like that of the yew; distinct from all other trees. It is a beautiful lawn tree, and makes a highly ornamental hedge.

Norway Spruce.—A lofty, elegant tree, of perfect pyramidal habit; remarkably elegant and rich, and, as it gets age, has fine, graceful pendulous branches; it is exceedingly picturesque and beautiful; very popular—and deservedly so—and should be largely planted. One of the best evergreens for hedges.

Conical Spruce.—A dwarf variety of compact, conical habit, becomes perfectly symmetrical without pruning.

Pendula-branched Spruce.—Leaves dark glossy green; branches very drooping.

Himalayan, or Smith's Spruce.—A noble and elegant tree, having the character of the Deodar cedar in foliage, and is distinguished by a striking and graceful drooping habit at all stages of its growth.

Dwarf Black Spruce.—A fine variety, growing from two to three feet in height, and three to four feet in breadth; foliage dark coloured.

Picea—*Silver Fir.*

Balsam Fir.—A very erect, regular pyramidal tree, with dark green, sombre foliage; grows rapidly, and is very hardy.

Cephalonian Silver Fir.—From Europe. A very remarkable and beautiful species; very broad for its height; leaves silvery and dagger-shaped, with a spine on the points. Quite hardy and vigorous.

Nordman's Silver.—This is a symmetrical and imposing tree: the warm green of the young shoots contrasts finely with the rich deep colour of the old foliage. The best of the silver firs.

Pitch Silver Fir.—From the mountains of Siberia. A medium sized tree, of compact, conical growth, with dark green foliage; fine and hardy.

Cupressus—*Cypress.*

Lawson's Cypress.—From California, where it forms a very large tree. It has ele-

gant drooping branches, and very slender, feathery branchlets; leaves dark glossy green, tinged with a glaucous hue. One of the fine cypresses.

Nootka Sound Cypress.—A desirable species from Nootka Sound. It is a pyramid in habit with light, glossy green foliage, sometimes with a bluish shade.

JUNIPERUS—*Juniper.*

These will only succeed in western Canada.

Irish Juniper.—Very erect and tapering in its growth, forming a column of deep green foliage; a pretty little tree or shrub, and for its beauty and hardiness is a general favourite.

Sweedish Juniper.—Similar to the Irish, though not so erect, with bluish green foliage, of somewhat lighter colour than the preceeding, forming a beautiful, pyramidal, small tree.

Venusta Juniper.—A rapid grower, of erect habit, and fine silvery foliage. Very ornamental and perfectly hardy.

Virginiana Red Cedar.—A well known American tree; varies much in habit and colour of foliage, some being quite stiff, regular and conical, and others loose and irregular. It makes a fine ornamental hedge plant.

PINUS—*Pine.*

Austrian.—A remarkably robust hardy spreading tree: leaves long, stiff and dark green. Growth rapid. Valuable for this country.

Scotch.—A fine robust rapidly growing tree, with stout erect shoots, and silver-green foliage.

White or Weymouth Pine.—The most ornamental of all our native pines; foliage light, delicate or silvery-green. Flourishes in the poorest soils.

Jeffrey's Pine.—This is a noble pine, with deep bluish-green leaves. It grows 150 feet high in North California. Hardy and very valuable.

TAXUS—*Yew.*

Would require protection in Canada.

English Yew.—A fine pyramidal variety, with dark-green foliage. Desirable.

Beautiful Variegated Yew.—A beautiful tree of small dense habit; leaves striped with silver, frequently turning to light yellow.

THUJA—*Western Arbor Vitæ.*

American.—A beautiful native tree, commonly known as the White Cedar. Especially valuable for screens and hedges.

Compacta.—Foliage light green, habit dwarfish, and quite compact.

Globe-headed.—Originated at Philadelphia. Forms a dense round shrub.

Hovey's Golden.—A seedling from American, of dwarf habit, globular outline, and bright green foliage. Fine and hardy.

Pyramidalis.—The most beautiful of all the Arbor Vitæs, having dark green compact foliage and remarkably erect form.

Siberian.—The best of the genus of this country. Exceedingly hardy; keeping colour well in winter. Growth compact and pyramidal. Makes an elegant lawn tree.

Tom Thumb.—Similar to the heath-leaved, but more desirable. Remarkable for slow compact habit. Valuable for planting in cemeteries and small places where large trees are not admissible.

ORNAMENTAL SHRUBS.

Azalea.

Mollis.—A splendid half-hardy species from Japan. Flowers large, like those of the rhododendron, in fine trusses of various colours.

Nudiflora—Pink-flowering American Honeysuckle, or Swamp Pink.—A native species with pink flowers.

Berberis—*Berberry.*

American.—A native species, forming a shrub or low tree, with handsome distinct foliage, and yellow flowers from April to June, succeeded by red berries.

European.—Red-fruited.

Purple-leaved.—An interesting and beautiful variety, with violet-purple leaves and fruit.

Calycanthus—*Sweet-scented Shrub.*

Floridus.—A native species, growing six to eight feet high, with double purple, very fragrant flowers.

Cornus—*Dogwood.*

Round-leaved.—A native species with round leaves, downy beneath. Flowers small, white, in flat cymes in June and July. Fruit light blue.

Cornelian Cherry.—Bright yellow flowers in May.

Mascula Variegata.—Leaves striped with pale yellow or white. Very beautiful.

Red-branched.—Very conspicuous and ornamental in winter on account of its blood-red bark.

Corylus—*Filbert.*

Purple-leaved.—A very conspicuous shrub, with large dark purple leaves. Distinct and fine.

Cut-leaved Filbert.—A very ornamental shrub, with deeply cut foliage.

Cydonia—*Quince.*

Japan.—Has bright scarlet-crimson flowers in great profusion in the early spring.

Blush.—A very beautiful variety of the scarlet, with delicate white and blush flowers.

Daphne.

Mezéreum.—Flowers appear very early—before the leaves—and are very beautiful.

Deutzia.

Rough-leaved.—One of the most beautiful profuse flowering shrubs. White.

Gracilis—Slender-branched.—A charming species introduced from Japan by Dr. Siebold. Flowers pure white. Fine for pot culture, as it flowers freely at a low temperature in the winter.

Crenata flore pleno.—Similar in growth and habit to gracilis. Flowers double; white, tinged with rose.

Candidissima.—One of the finest shrubs, producing snow-white flowers of great beauty, and valuable for bouquets and baskets.

Pride of Rochester.—A variety raised from Crenata flore pleno, and producing large double white flowers; the back of the petals being slightly tinged with rose. It excels

all of the older sorts in size of flower, length of panicle, profuseness of bloom and vigorous habit; blooms nearly a week earlier than Crenata flore pleno.

Parviflora.—Of dwarf habit. Flowers medium size, in short racemes, valuable for forcing.

DIERVILLA—*Weigela.*

Amabilis.—Of robust habit, large foliage and flowers, and blooms freely in autumn. A great acquisition.

Rosea.—An elegant shrub, with fine rose-coloured flowers. Introduced from China by Mr. Fortune, and considered one of the finest plants he has discovered. Quite hardy. Blossoms in May.

Desboisi.—A beautiful variety, with deep rose-coloured flowers. One of the darkest and best.

Variegated.—Leaves bordered with yellowish white, finely marked flowers, bright pink.

EUONYMUS—*Strawberry or Spindle Tree.*

European.—Forms a tree sometimes thirty feet in height. Fruit rose-coloured.

White-fruited Euonymus.—A variety with white fruit.

FORSYTHIA—*Golden Bell.*

Viridissima.—A fine hardy shrub, introduced by Mr. Fortune, from China. Leaves and bark deep green; flowers deep yellow. Very early in spring.

Fortunei.—Growth upright; foliage deep green; flowers bright yellow.

HALESIA *or Silver Bell.*

Common Snowdrop Tree.—A beautiful large shrub, with pretty white, bell-shaped flowers in May. It is distinguished by its four-winged fruit, which is from one to two inches long.

HIBISCUS—*Althea or Rose of Sharon.*

Boule de Feu.—A fine new variety of vigorous growth. Flowers large, very double, and of a beautiful violet-red colour.

Variegated-leaved Double Purple.—A very showy kind; distinct. Leaves variegated with light yellow. Flowers double purple.

Double Variegated, or Painted Lady.—Fine double flowering. Variegated pink and white.

Double Lilac.—Very handsome; double lilac flowering.

Double Purple.—Double reddish-purple; fine.

Double Red.—Double red flowers.

Violacea.—Double flower of violet-blue colour, and of medium size.

Duc de Brabant.—Flowers large, very double, and of a reddish-lilac colour. One of the best varieties.

Pæoniflora.—Rosy-purple flowers. Dwarf grower, and very free flowering.

Totus Albus.—Single; pure white. Very fine.

HYDRANGEA.

Paniculata grandiflora.—A fine shrub, growing from eight to ten feet high. Flowers white, in great pyramidal panicles a foot long, and produced in August or September, when very few shrubs are in flower.

Quercifolia—Oak-leaved Hydrangea.—A hardy massive shrub of woody growth and bushy habit; leaves lobed like those of the oak, and downy beneath, turning to crimson in autumn. Flowers white, changing to purple.

Otaksa.—Large foliage, of a deep green. Bears a profusion of deep rose-coloured flowers in huge trusses. New and very fine.

Thomas Hogg.—A beautiful variety, with large trusses of pure white flowers. Not hardy, but very valuable for forcing.

Hortensia—Garden or Changeable Hydrangea.—Native of Japan. Introduced in 1790. An elegant, well known plant, with large leaves, and large globular heads of rose-coloured flowers, usually grown in pots or boxes. In the north requires protection out-of-doors in winter.

KERRIA.

Japonica.—A slender green branched shrub, five or six feet high, with globular, yellow flowers, from July to October.

LONICERA—*Upright Honeysuckle.*

White Tartarian.—Forms a high bush with white flowers and fruit.

Fragrant Upright.—A spreading shrub, with deep green foliage, and very fragrant small flowers, which appear before the leaves. Foliage almost evergreen.

Pink Flowering.—A beautiful shrub, very vigorous, and producing large, bright red flowers, striped with white, in June. Superseding the old Red Tartarian.

PHILADELPHUS—*Syringa or Mock Orange.*

Garland Syringa.—The common popular shrub, with pure white delicately perfumed flowers.

Double Flowering Syringa.—A variety with partially double very fragrant flowers.

Yokohama.—A white and very fragrant species from Japan, of upright, compact habit; foliage plaited. Makes a beautiful shrub.

PRUNUS—*Plum.*

Dwarf Double White Flowering Almond.—Produces beautiful double white flowers in May.

Dwarf Double Red Flowering Almond.—A beautiful shrub, bearing in May, before the leaves appear, an abundance of small double rose-like flowers, closely set upon the twigs.

Double Flowering Plum.—Native of China. A highly interesting and desirable addition to hardy shrubs; flowers double, of a delicate pink, upwards of an inch in diameter, thickly set on the long, slender branches; flowers in May.

RIBES—*Currant.*

Yellow Flowering.—A native species, with glabrous shining leaves and yellow flowers.

Crimson Flowering Currant.—An American species with deep red flowers, produced in great abundance in early spring.

Double Crimson Flowering.—A variety of the crimson, with double flowers in July.

SAMBUCUS—*Elder.*

Golden.—A handsome variety with golden-yellow foliage.

Fern-leaved Elder.—Luxuriant grower, with deeply and delicately cut foliage.

Variegated-leaved Elder.—Of strong, healthy growth; foliage mottled with white and yellow.

SPIRÆAS—*Meadow Sweet.*

Billardi.—Rose colour; blossoms nearly all summer.

Callosa Alba.—A white flowering variety of dwarf habit; very fine.

Double Flowering Plum-leaved.—Very beautiful; its flowers are like white daisies.

Douglassi.—Has spikes of beautiful deep rose-coloured flowers in July and August.

Spiræa van Houtte.—The finest of all the Spiræas; flowers in clusters, from the base of stalk to the end of the shoots being a mass of delicate white bloom. Is splendid for ornamental hedging.

Elm-leaved.—Leaves somewhat resembling the elm; large, round clusters of white flowers.

Golden-leaved.—An interesting variety, with golden-yellow tinged foliage and double white flowers in June.

Lance-leaved.—Narrow, pointed leaves, and large, round clusters of white flowers that cover the whole plant.

Revesii flore pleno.—Flowers white and double; blooms freely in clusters.

STAPHYLEA—*Bladder Nut.*

Colchica—One of the finest early flowering shrubs; flowers white, fragrant, disposed in clusters.

SYMPHORICARPUS—*St. Peter's Wort.*

Snowberry.—A well-known shrub, with small pink flowers and large white berries, that hang on the plant in winter.

Red-fruited, or Indian Currant.—A shrub of very pretty habit; foliage, flowers, and fruit small; fruit purple; hangs all winter.

SYRINGA—*Lilac.*

Josikæa, or Chionanthus-leaved.—Has dark shining leaves, like the White Fringe Tree, and purple flowers; fine and distinct.

Persian.—Medium sized shrub, with small leaves and bright purple flowers.

White Persian.—A fine sort; white flowers, delicately tinged with rose.

Common Lilac.—Bluish purple flowers.

Large-flowered White Lilac.—A beautiful variety, has very large, pure white panicles of flowers.

Charles the Tenth.—A strong rapid grower, with large shining leaves, and reddish-purple flowers.

Double Purple.—Similar to the common, but has a double row of petals. Very neat and pretty.

Dwarf Lilac.—Distinct, large and compact. Spike of dark reddish-purple flowers.

TAMARIX.

African.—This is a very beautiful shrub, with small leaves somewhat like the juniper, and delicate small flowers in spikes.

Chinensis.—A vigorous upright grower, with delicate foliage of a lively green colour. Flowers rose-coloured in September.

VIBURNUM—*Arrowroot.*

Early White.—A large robust shrub, with soft hoary leaves, and large clusters of white flowers in May, succeeded with red fruits. Retains its foliage very late.

Opulus or Bush Cranberry.—Both ornamental and useful. Its red berries, resembling cranberries, hang until destroyed by frost late in the fall. Resembling the snowball in wood and foliage.

Guelder Rose—Snowball Tree.—A well-known favourite shrub of large size, with globular clusters of pure white, sterile flowers, the latter part of May.

Plicatum.—A rare and exceedingly beautiful species from Japan. Flowers pure white, and very large globular heads.

XANTHOCERAS.

Sorbifolia.—From central China. One of the most important introductions of the last few years. Forms a shrub or small tree. Foliage resembling that of the Service Tree or Mountain Ash. Flowers five-petalled, white, reddish-copper coloured at base; disposed in racemes about eight inches long. Flowers expand in April or May with the leaves.

CLIMBING SHRUBS.

AMPELOPSIS.

American Ivy or Virginian Creeper.—Has beautiful digitate leaves that become rich crimson in autumn. A very rapid grower. Like the bignonia and ivy it throws out tendrils and roots at the joints, by which it fastens itself to anything it touches. One of the finest vines for covering walls, verandahs or trunks of trees. Affords shade quickly.

Veitchii.—A miniature foliaged creeper which clings with the tenacity of ivy. Beautiful leaves of a glossy green, shaded with purple. Perfectly hardy, and colours finely in autumn.

ARISTOLOCHIA.

Sipho.—A twining vine of rapid growth, having large dark green leaves, and curious brownish pipe-shaped bloom.

CLEMATIS—*Virgin's Bower.*

The following varieties bloom in the spring (May and June) from the old or ripened wood:—

Fair Rosamond.—Blush-white, with an indistinct wine-red bar.

Lady Londesborough.—Silver gray; pale bar.

Miss Bateman.—White chocolate; red anthers.

Stella.—Light violet; distinct reddish plum bar.

Sir Garnet Wolseley.—Bluish ground; plum bar.

Varieties which flower in summer from the old or ripened wood:—

Fortuneii.—Double rosette formed; creamy white; fragrant.

John Gould Veitch.—Double lavender-blue.

Lucy Lemonie.—Double white.

Varieties flowering during the summer and autumn successionally, on short lateral summer shoots; flowers dispersed:—

Henry I.—Very large fine form; creamy white.

Lady Caroline Neville.—French white, with mauve bars.

Languinosa candida.—Grayish white.

Lawsoniana.—Large rosy purple; darker veins.

Otto Frœbel.—Grayish white; very large.

Varieties which flower in the summer and autumn successionally in masses, on summer shoots:—

Mrs. James Bateman.—Pale lavender.

Viticella modesta.—Large reddish-violet.

Viticella rubra grandiflora.—Bright scarlet-red.

Viticella venosa.—Reddish-purple; veined. One of the finest.

Varieties flowering during the summer and autumn in continuous masses, on summer shoots:—

Flamula.—European Sweet Clematis. Flowers small, white and very fragrant.

Jackmanii.—Large intense violet purple. Remarkable for velvety richness; free in growth, and an abundant and successive bloomer. A great acquisition.

Lady Stratford de Redcliffe.—Delicate mauve.

Madame Grange.—Crimson violet; red bar in centre.

Magnifica.—Reddish-purple, with red bars.

Rubella.—Rich claret-purple.

Star of India.—Reddish-plum, with red bars.

Velutina purpurea.—Blackish-mulberry.

LONICERA—*Honeysuckle, or Woodbine.*

Japan Golden-leaved.—A handsome variety, with the foliage beautifully netted or variegated with yellow.

Canadian.—A very robust, rapid grower, with large glaucous leaves, and yellow flowers.

Yellow Trumpet.—Well known native vine, with yellow trumpet flowers.

Chinese Twining.—Well known vine, holding its foliage nearly all winter. Blooms in July and September, and is very sweet.

Monthly Fragrant.—Blooms all summer; red and yellow. Very fragrant flowers.

Scarlet Trumpet.—This and its varieties are the handsomest in cultivation. It is a strong rapid grower, and produces scarlet inodorous flowers all summer.

TECOMA—*Trumpet Flower.*

American Climbing Trumpet Vine.—A splendid hardy climbing plant, with large trumpet-shaped flowers in August.

Dwarf Red or Parple Trumpet Flower.—A vigorous shrub, with purplish-crimson flowers.

WISTARIA.

Chinese.—A beautiful climber, of rapid growth, and producing long pendulous clusters of pale blue flowers. When well established makes an enormous growth.

Chinese White.—Pure white flowers. Introduced by Mr. Fortune from China, and regarded as one of the greatest acquisitions.

Magnifica.—Flowers in dense drooping racemes of the same size as the Chinese, and of a pale lilac colour. Vigorous and perfectly hardy.

Double Purple Wistaria.—A rare and charming variety, with perfectly double flowers, deeper in colour than the single, and with racemes of remarkable length. The plant is perfectly hardy.

We do not feel that our space will permit us to touch on the herbaceous plants, such as Pæonias, Phlox, etc., etc., as there is matter in them for a separate article. Already we have exceeded in length our report, and yet nothing has been said on most important points, viz., transplanting, pruning, etc. When one looks at the bare and mutilated trunks of the trees in our own fair city, one cannot but wonder at the ignorance and want of taste displayed, in view of the fact, too, that nearly every nurseryman's catalogue contains concise information, plainly written, which should teach any man better than to mutilate trees in such a way.

Much could be said too on the arrangement of trees and shrubs. We notice in most grounds too great a tendency to isolation in planting, whereas the only way to bring out the beauties of many trees and shrubs is by massing them in groups, so that their bright and many-coloured foliage will be brought out by contrast, or their glorious bloom shown by massing. Such shrubs as Weigela, Deutzia, Spiræa, Hydrangea, Japan Quince, Double Flowering Almond, Lilac, Viburnum, Althea, Pæony, etc., etc., when planted in masses produce a magnificent effect, need no protection, and little care or management. What grand masses of bloom can be had by grouping the various families, while the purple and variegated-leaved trees and shrubs can be planted in such a manner as to form new and striking contrasts.

W. E. Wellington.

The President.—The Pyramidal Arbor Vitæ which Mr. Wellington refers to is a very beautiful tree. My Azalea nudiflora has failed altogether. I have tried transplanting it from the woods several times, and have never had any satisfaction with it. The Japan Quince was referred to. I have been very much disappointed, after reading of all the glorious colours it takes, and after ordering several of the shrubs, to find that when they flowered it required considerable observation to discover any difference between the different varieties. I do not think too much can be said in favour of Hydrangea paniculata grandiflora. It is one of the most striking objects in a shrubbery. The clusters will often measure from ten inches to a foot or more across, and on good rich ground nothing is more beautiful. They generally last a full month if they are well moistened and well fed, and they change from nearly white, when they open, until they get quite pinkish, before the flowers begin to fade. The Double Flowering Plum is a shrub that, I think, is not sufficiently disseminated. True, it has the disadvantage of losing its flowers in a very short time; but the colour is so pretty, and the shrub is so completely covered with bloom during the time of blossoming, that it is then a perfect picture; and the foliage itself is very pretty. Among the Viburnums praise was given to the V. plicatum from Japan, which is no doubt much prettier than our ordinary snowball. But there is one variety that was not mentioned, and that is Viburnum lantanoides. Its flowers are succeeded by berries which get quite red-coloured as the season advances. It is a native of this country, and very hardy.

Mr. Morris.—There is one of the Spiræas left off that list; that is, the Spiræa Van Houtte. It is a mass of pure white, perfectly hardy, and one of the earliest in the season.

Mr. Wellington.—That has been omitted in copying. It is certainly one of the most beautiful Spiræas I have ever seen.

The President.—It is a perfect mass of bloom from top to bottom when in bloom.

Mr. Roy.—I had four flowers on the Hydrangea paniculata grandiflora this year—the one sent out by the Society.

Mr. Gilchrist.—The Juniperus prostrata is a very pretty one. I think it would be very suitable for amateurs. It will grow on drifting sand.

The PRESIDENT.—There is another very valuable ornamental tree which grows all through the western section of Ontario, and that is the Sour Gum—we have had reference to the Sweet Gum. There are large forests of this Sour Gum, or Nissa multiflora, from Long Point to Amherstburg. That is the only part of Canada that I know of where it grows wild, but it seems to grow all over the country if planted out; that is, it stands the climate all over the western part of Ontario. I do not know how it would stand further east.

MR. BEADLE.—I am very glad that Mr. Wellington has called attention to the Japan maples. Of course they are under trial here, particularly those purple-leaved varieties. Some of them we have already been obliged to say are not hardy. But whether they are hardy or not, the common Japan maple—the one that is known as polymorphum, which is used as a stock on which to graft these different varieties—is perfectly hardy. I believe it will grow in Manitoba and Muskoka. The leaves are of very beautiful form, and in autumn the tree puts on all the beautiful tints of our maples, with a variety of shading unknown to our maples. I think it is a tree that can be recommended to anyone having a small city lot where a large-growing tree cannot be planted, but where a small tree that is attractive at all seasons is wanted. The time will come when nurserymen will be able to supply it in quantity. It can be got now to a limited extent. Then again, I think Mr. Wellington has done us good service in calling attention to that western Catalpa. I have long cultivated the Bignonioides, which is beautiful in bloom, beautiful in foliage, but in its earlier growth apt to be killed back by our winters. If we succeed, by a little shelter and care, in getting it to live until it is able to strike its roots down below frost line, and to grow a little more moderately than it does in its earlier childhood, so as not to be so sappy and tender, it will stand the climate about St. Catharines—I do not know how much farther north. I have seen it growing well at Hamilton. It is suitable for a small lawn, and indeed for a large one. The flowers are pretty, and the long pods—nearly a yard long—are very ornamental. Catalpa speciosa can be grown anywhere in Canada. I do not know whether it would grow in Muskoka, but it does grow in Nova Scotia and in many of the colder parts of Ontario. In its blossoms it is as beautiful as the bignonioides, and a little more so. The pods are not quite so long, and may perhaps be in that respect not quite so ornamental. The leaves are heart-shaped, very much like those of the Catalpa bignonioides. I think the variety is worthy of commendation. I wish specially to thank Mr. Wellington for telling us of Cornus Florida. Why Canadians have omitted to cultivate this native tree, which in summer is very pretty and in autumn is as handsome as an English holly, I cannot see. I wish to call attention to the oak-leaved Mountain Ash. It is a very upright, compact-growing variety—at least, it is so when it has got some growth. The leaves are different in form from those of the common Mountain Ash. Instead of being pinnate they are entire, and have a distant resemblance to a cut-leaf. Somehow it has had the name "oak leaved" given to it by somebody who thought it resembled an oak. If we are going to plant mountain ashes—and I think all of them are pretty—it deserves a place among them. Then, among the oaks, the scarlet-leaved oak—the Coccinea—has leaves which are beautifully cut. When green they are very smooth and glossy, and the shiny leaf looks as though it were burnished; and then in autumn it takes on a scarlet hue. It is a tree which grows wild in our forests—not so generally distributed over the Province as some other oaks, perhaps. It is a tree for large lawns and even parks, and might, I think, be planted with a great deal of satisfaction. Then, among the elms, when we go away from our own graceful elms, if we want one that is specially drooping—beneath which we can place our seats—I think there is none of them equal to the Camperdown Elm. It is certainly one of the best of the drooping elms we can get. The Purple Filbert has not, I think, received enough attention. If we want contrasts in foliage I know of nothing that will give it to us better than that. The leaves are quite large, larger than those of the common type of the species. They are almost purple in the summer, but late in the autumn they grow rather bronzy and green. If you find a tree that keeps purple leaves or white leaves all the season you will find a tree that will soon die. With the exception of late in autumn when it becomes bronzed and somewhat green, the Purple Filbert makes a most perfect contrast all the season through. Then, among lilacs that are hardy and will stand almost

anywhere, the most beautiful is the Persian Lilac. When the branches come out they droop away over, and when they are weighed down with their load of blossoms—the spikes of which are long—I think it is one of the most fairy-like plants we have.

Mr. Dempsey.—With regard to lilacs, is it customary to graft the finer sorts on the common stock?

Mr. Beadle.—Yes.

Mr. Beall.—How many colours are there of the Persian Lilac? Are there several?

Mr. Beadle.—My opinion is that there is but one that deserves to be called a colour, and that has a light lilac colour. There is a variety of Persian lilac that is called white.

Mr. Beall.—There is a reddish lilac too.

Mr. Beadle.—Well, this one that I refer to you might call reddish or purplish.

Mr. Beall.—A few years ago I bought several from you, and I have two distinct colours. I bought, perhaps, half-a-dozen.

Mr. Beadle.—I am inclined to think that difference in soil varies the colour of lilacs. There may have been difference in colour. The double Wistaria is a beautiful thing. I do not know how hardy it will be. We have not had it long enough yet to talk much about it; but if one wants something beautiful in the way of bloom he will find it in that.

Mr. Dempsey.—We have in our section of the country a curiosity among native trees. We have a maple tree that was discovered two years ago in the forest in the county of Northumberland, the foliage of which is pretty at any time, but which for about three weeks is just as brilliant in colour as any Chameleon Coleus you have ever seen. The leaves are of all shades of scarlet apparently. It presents one of the most beautiful sights I have ever seen yet in the shape of a tree. Two years ago my attention was drawn to that tree by my daughter, who was looking for ferns or mosses, and who asked me to go that way on purpose to see it. I thought possibly it was the work of an insect that made it look so beautiful, but this fall I went to see it again, and it was just as it was a year before. The trunk of the tree is about seven or eight inches in diameter. What I am most anxious about is to know in what way that tree could be propagated. It is worthy of propagation.

Mr. Leslie.—Do you say it was before the frost you saw the variegation.

Mr. Dempsey.—Yes.

Mr. Beadle.—I wonder if there is anything the matter with that tree that made it turn scarlet so early. One of my neighbours came to me one day in July, and said he: "Mr. Beadle, I have found something, and it is worth a fortune to a man, and I have come to tell you of it. I think you would like to get it." Said I, "What is that?" Said he, "It is a scarlet-leaved maple." Said I, "Where did you find it?" "Oh!" said he "I found it out here in the bush." Said I, "How much scarlet is there in it?" Said he, "Oh, it is just as scarlet as it is in autumn." Said he, "If you will agree to propagate that tree and let me go half with you I will show you where it is." "Well," I said, "I will not tell you till you let me see the tree." I went and saw it, and I found that the rabbits or something else had knawed the bark off around the tree, and in consequence the leaves had turned as scarlet in July as they usually do in autumn.

STANDING COMMITTEES.

On motion of Mr. Beadle the following committees were appointed:—

On New Fruits.—Messrs. Dempsey, (Chairman), Wright, Morris, Allan, and Leslie.
On Vegetables.—Messrs. Beall, (Chairman), Rennie, and Page.
On Ornamental Trees.—Messrs. Leslie, (Chairman), Goldie, and Gott.
On Roses.—Mr. Wellington, (Chairman), the President, and the Secretary.

PEARS.

The Convention then proceeded with the discussion of the next item on the programme: "Pears, for Home Use and for Market. What varieties? On what soils?"

Mr. Beadle.—The Josephine de Malines is the best winter pear we have got, or are likely to get. For a long time I took the ground that there was not a winter pear worth anything. They used to tell us how good the Vicar of Winkfield was, and I grew it year after year, and I used to put a squash on one side and a pumpkin on the other and the pear in between, and I could scarcely ever tell the difference in flavour between them. One day Mr. Arnold came to one of our meetings in Hamilton and gave me a Vicar to eat. I took my knife and ate it and said nothing. When I had finished Mr. Arnold looked at me, and said, "Well, now, Mr. Beadle, what do you say about that." I said, "If you get any more I want to know. That is the only Vicar of Winkfield I ever ate that was good for anything." "No," he said, "I have no more to spare; I have only three or four, and I want them for other members." The next year I asked Mr. Arnold if he had another Vicar of Winkfield. He said "he had not; you must be content with such a pear once in a lifetime." The Beurrè d'Anjou you can keep with great care up to this time; but you nor I would not keep it so long—we would have it ripe and eaten up. By dint of putting it in a place where it will almost freeze—watching it carefully so as to keep it in a temperature as near 32° as possible without actually freezing—you can keep it. But that is not my idea of a winter pear. The Josephine de Malines you can keep almost to this time. When the pears of that variety are well-grown the flesh is a nice colour, almost pink, and is delicious to the taste; but the pears of the first crop that you get off a tree of the Josephine de Malines have no more taste than so much sawdust; and so it will be perhaps for three or four years until the tree has attained maturity. After that the pears will be fine.

Mr. Dempsey.—The Mount Vernon is a very good winter pear in point of flavour; but it will not compare with the Josephine de Malines. The Mount Vernon is rather a November pear. It will not keep to this season of the year. It is not a good cooking pear, and on that account I cannot recommend it so highly as I would some other varieties. It produces well, and when the crop is properly thinned—which it requires—it produces very fine specimens. But it is liable to overbear. It does not seem so liable to be attacked by the blight as some other varieties. I can endorse everything the secretary has said about the Josephine de Malines. At first, after receiving it from Mr. Ellwanger, I planted about fifty trees I liked it so well. It fruited very early, and then I was just as much disappointed in it as Mr. Beadle says you will be. I top-grafted all of them but one tree. Now we are top-grafting them back again. The Josephine de Malines is slow in growing. The Duchesse de Bordeaux will keep till May, and I cannot see any reason why we should not cultivate pears, and have our table graced with the most beautiful fruit that is cultivated, till as late as they have it in France and other countries in Europe. You will find them there cultivating those pears successfully. The Duchesse de Bordeaux is a lovely pear when properly ripened; but for the first two or three years after the tree commences to bear the fruit will not ripen under any circumstances whatever, and you might as well have a quince to eat—my teeth were never strong enough to get a bite out of it. But after that time the pears ripen up as well as the Josephine de Malines; and they keep till away on in the spring. Their flesh presents one of the most lovely yellow you can imagine. But what is of more importance to us in the cultivation of the pear than what I have been talking about is, that we should be able to produce varieties for ourselves. When I see how many men in Europe have devoted themselves to the improvement of the pear, I feel rather jealous that, with so many enterprising people as we have in Canada—so many enterprising fruit growers as we have, members of this Association—so few of them are engaged in acclimating this, the most beautiful fruit that God has ever given us. Notwithstanding that it is so easy to improve or acclimate this fruit, we have very few persons who have ever made the effort to produce seedling pears with the intention of improving or acclimating that fruit. I can assure you that there is no fruit so easily crossed in the flower as the pear. I will tell you the prin-

ciple I have adopted for improving this fruit. We have a number of varieties planted close together, and it is only necessary to allow a branch to extend a sufficient distance to come into contact with a branch of some other variety,—for example, a branch of the Beurre Hardy, one of the finest pears we can cultivate, with a branch of the Buerre Gris, which is a magnificent keeper. We want to fetch them into blossom at the same time, and that is very easily done by raising or lowering one of the branches. By bringing one branch close to the ground and having another four feet higher, you can cause a week's difference in the time of blossoming. From the branch of the tree that we wish to hybridize, we pick off the blossoms that we cannot open prematurely, and remove the stamens from the remainder. We pick them away so that there will be no fruit formed whatever, and then nature does the work for us. I have made several mistakes that I might as well speak of here. I have produced some hundreds of seedling pears that have been artificially crossed in this way, and when I have got a variety that was dwarf-growing I have thought it was too tender, and have invariably thrown it away. Again, a variety that would not withstand the blight I have allowed to die. Now, you may recollect that Mr. Gibb, who is travelling in Russia with some friends, describes some plums and cherries that he found growing in some sections of that country on bushes not larger than gooseberry or currant bushes. When I saw this I at once began to think of our grains. My attention was called to the Indian corn. In its native country it grows to a height of about ten or twelve feet, and it requires, to attain its full growth, about eight months. In other climates it will not attain a height of more than four feet, but will make that growth in about eight weeks. Now, if corn will so adapt itself to the differences of climate so much that it can grow a hundred miles north of us, although strictly it is a tropical plant, why cannot the pear tree adapt itself to the severity of climate as well? Those plums and cherries have been brought from the south, and we find that, in order to their becoming more hardy, nature has provided that they shall require, before fruiting, a less growth than the same sort of trees in milder climates, because they had not as much time in which to mature. I am of the opinion, then, that I have rejected the best of my seedlings in throwing away the small-growing varieties. I only wish that we could manage in some way to get some of our young men to commence this enterprise in early life; but even then they would have grey hairs, I suppose, before they would be likely to see any results of much consequence from their labours. Such work is much more discouraging to an old man; still I expect to keep at it as long as God gives me breath.

Mr. Beadle.—We have now before the public a cross between the European Pear and the Chinese Sand Pear. Mr. Parry, of New Jersey, got hold of this accidental cross in a garden in Philadelphia, where it was raised, and he claims that it is blight-proof. That position is controverted, however, to an extent, by a few who say they have seen trees of it blighted. But granting that that is a variety of which there may have been a few trees blighted, I can speak of the one known as the Kieffer of which a great many thousand trees have been planted, and yet but very few instances indeed, if any, have been noticed of its being attacked by that disease which we know as pear-blight. Now, I think here is another direction in which we ought to exercise our skill. Let us see if we cannot raise a variety of pear that is not subject to the blight. A few of the varieties that we now have are not so liable to die of it as some others. The Flemish Beauty often goes—the whole tree—with the blight; sometimes the bark of it. The Duchesse D'Angouleme seldom dies of it. The Doctor Reeder very seldom blights. Now, if in this cross with the Sand Pear we have got another strain that seldom blights, by working this, and the Duchesse D'Angouleme, and the Doctor Reeder together, crossing and intercrossing, may we not hope to raise a race of pear that will enable us to defy blight? I speak of this in order that some gentlemen, young or old, who are interested in raising new varieties of pears may turn their attention to it. I have tried the Kieffer pear and like it very much. It has a quince-like flavour when cooked that I like very much. When raw it is very juicy, but has a peculiar flavour which I do not relish—not so much as that of some of these other pears; it is not buttery. It has not the fine flavour of the Flemish Beauty or some of those other pears that we are accustomed to. It may be, however, that by crossing that pear with some others we may get a pear of improved flavour. This Kieffer pear is going to be planted yet more extensively than it has been,

especially in Delaware and New Jersey, for canning purposes. I think people must have got crazy last fall at Philadelphia, when they paid twenty-five cents apiece for those pears. Mr. Satterthwaite, the President of the Pennsylvania Horticultural Society, had a very large orchard of them, and had a large quantity of that variety of pears, and he sold them all in the Pennsylvania market at twenty-five cents each. This circumstance reminded me of a little incident that occurred this summer at my own place. I happened to have twenty-two vines of the Champion grape in bearing. My gardener said to me one day, "I am going to Toronto to-morrow, and I think I will take those Champion grapes with me." I said, "I hope you will, because I do not think anybody here wants them." He did so, and when he came back he handed me forty dollars which he said he had got for them. I said then as I say now about the Kieffer pears, that I thought the fools were not all dead.

The President.—I wish to take a little exception to the way my friend Dempsey recommends for hybridizing pears. If you are going to calculate on what you are to get from a cross between any two varieties, by operating in the way he describes, you may have a result that will be a little disappointing. It is to remove the stamens from one variety and leave the other variety untouched. The only two ways in which those stigmas could be fertilized, would be through the agency of the wind blowing the pollen from the one to the other, which would be very unlikely to be accomplished; and, the more probable way, through the bees carrying the pollen on their legs from one to the other; and the bees are just as likely as not to go to some variety that he does not want to cross from, and carry pollen from that to the one from which he has removed the stamens. I should prefer the pollen carried by some one with more intelligence than a bee. It is very easy to gather the pollen and put it on the blossom of the tree with which you wish to cross, and then cover the blossom. I have done this, and found no very great difficulty in the way. Perhaps it would not be out of place, as Mr. Dempsey has referred to Mr. Gibb's work in Russia, to call attention to one course of work that might be undertaken in the way of hybridizing. Mr. Gibb speaks of a variety of cherries grown there on bushes, which is very fine and very prolific. Now, we have a dwarf cherry in this country known as the Sand cherry. It is grown up in the northern sections of the country—up about Manitoulin Island and the Sault, and also along the shores of Lake Huron. I think it might be crossed with our native varieties, and produce a race of cherries somewhat like what Mr. Gibb describes; and if we could get them to grow on bushes about the size of gooseberry bushes we could protect the cherries from the birds.

Mr. Dempsey.—This system of hybridization, under which you have to protect your branches with paper bags or muslin bags, involves considerable work and attention, and if the wind is blowing when you have to open those to operate on the blossom the pollen grains which are flying in the air may fall on blossoms on which you do not want them. I have grown pear and apple trees in tubs and had them bearing there. All my first hybrids were produced on such trees as those, and the experiments were performed invariably under glass. It is very hard on the eyes and on the head to work under glass when the sun is shining very brightly. I am seeing the results of my labour, however, more and more every year. We have as the result of these crosses some fruits that are delicious in flavour, though lacking in size; and we have some that are not lacking in either size or flavour. I felt a little afraid to say a year ago that I had succeeded in crossing an apple with a pear; but I have no hesitation now in saying I have accomplished it. I have had the fruit this year. The apple had been artificially fertilized with pollen from the pear. Mr. Beadle suggested that we use for parents such varieties as the Duchesse d'Angouleme, varieties which are blight-proof. Now, I have never seen any blight on the Josephine de Malines, and I have not seen any blight yet on my grounds on the Duchesse d' Angouleme. Nevertheless, I had a cross on my grounds from those two varieties which had attained a height of fifteen feet last year, and from which I was expecting to have fruit that was going to be something good, and to my astonishment one day my wife said, "Why, there is a blight on that seedling tree." I cut off the branch then, and a few days afterwards came that way again, and my wife said, "Why, there is another branch blighted on that tree." I kept on cutting off branch after branch, and all I have left is a little sprout. Some of the most hardy plants that I have are

crosses of plants that are liable to blight—that are not hardy. I have some seedlings of the Beurrè d'Anjou, and thus far they are free from blight, although the trees all around them are blighted. I judge that we shall be able to get a good variety from some two inferior varieties on the principle on which in poultry raising we get a good variety from crossing two varieties that are deficient in opposite qualities.

Mr. Doel.—I am going to ask a question about a tree of which I can only give a general description. The tree I spoke of bore the three or four last years. It is of a somewhat spreading habit, resembling more the Clapp's Favourite, perhaps, than anything else. The few pears that it had on in 1881 were of medium size, rather flattened and russet, a very nice pear, a late fall pear. Last year the pears that that tree had on were as nice Clapp's Favourite as you would find. What is the reason of that?

The President.—What time did the fruit ripen last year?

Mr. Doel.—It was a little later than the Clapp's Favourite. We picked the fruit before we did that of the Duchesse or any of those pears, so as to have it in perfection—without rotting at the core.

The President.—How did it compare with the Bartlett as to the time of ripening?

Mr. Doel.—It ripened earlier than the Bartlett.

Mr. Beadle.—I think we shall have to send for Mr. Arnold. He is the man who knows all about that. He laid some apples an the table here as Spitzenburgs, which came from a tree of that variety, but which were russets. One branch of that tree always bears that kind of apples. When we want anybody to tell us about anything that is queer, strange and abnormal we always go for Mr. Arnold, and if he does not know about it we give it up.

Mr. Doel.—This tree stands low. It is on the side of a hill about half-way down the hill, and is about twenty-five feet high. The top of the hill is planted with cherries, and down towards the bottom of the hill it is crab apples. There are odds and ends of plums planted along that side of the hill. The soil above the crab apples is sandy. A Beurrè Clairgeau which I had came into bloom this spring, and I concluded we would have to take off at any rate three-fourths of the fruit, but it never put out a leaf. The blossoms dropped apparently naturally, and then the tree died. I then examined it more carefully, and about a foot up from the ground the bark was swollen and cracked.

FRUIT CULTURE AND CHARACTER-BUILDING.

A paper on the above subject by Mr. Gott was here submitted. It was as follows:

My Friends of the Fruit Growers' Association of Ontario:

According to my text, which may be a little outside of your present programme of subjects, I am pleased to present to your thoughtful attention the bold and beautiful figure Pomona, as a character-builder. This beautiful and noble nymph is to be represented as employed upon us in our most vital and important interests, namely, our character for this world and after. Block upon block, block upon block, is deftly laid permanently in its place by her accomplished and skilful hands, as the structure rises in high and noble symmetry until the apex is reached, and all beholders cry "glory, glory unto it." Perhaps some of you may be tempted to say this is a fanciful idea, and rather stretched for our purpose and objects? Well, let it be granted; but, if we can succeed in gathering only one or two useful lessons from it, what odds about the fancifulness of the theme. There are, doubtless, from the beginning, many noble influences at work upon character, and if we can by a slight stretch of fancy make our favourite industry one of them, what are we going to loose by the effort? Surely it cannot be denied that a man's business has an influence upon his character, and if by plain consideration we can deduce that ours has an ennobling influence upon us, is it not an end worthy of the effort? Should we not be exceedingly grateful of the thought, that ours as a business is capable of exerting such an influence upon us? In the formation of the character of men it

is doubtless true, that many influences continue their force upon them, the chief of which are perhaps

THE HOME, THE CHURCH, AND THE STATE,

and our business, we think, may safely be added as a real factor in the process.

But, to come without any further apology to our theme. Pomona as a builder, has a definite work to do upon us, distinct from all other outside influences; for though she may be, and indeed is helped by the other forces mentioned, yet she is not supplanted by them; she still has her own, her essentially proper work to do upon us to help us to reach the high development of our being, the formation of high and noble character. She does her work upon us by a sort of reflex action, and the intensity and efficiency of the work is in exact proportion to our love and entire devotion to her. Her services are paid by the richest returns, and the more and better we do for her, the greater and more blessed are the returns. Veteran fruit growers, can you not testify that this is no myth? Have you not found this to be abundantly and encouragingly true in your past experience in the services of our esteemed art? I know you will all answer in the most united affirmative. Character, from an old word, meaning to write or engrave, is literally the peculiar or distinguishing marks of personality, and indicates internal principle of action, and is as variable as the mental compositions of men. It is, moreover, that by which we are individually

"KNOWN AND READ OF ALL MEN."

Certain types of character are popular and win men many friends, and the converse are unpopular. When a man becomes settled in his principles of action, and his daily life among his fellows clearly manifests the traits, he is said to possess *real character* in contrast to *estimated character*, which is simply character in its transition state and unattained. Character may be of widely different degrees of excellence, according to principles and attainments of the person concerned, from a low to a high and noble character; but, in no case can a noble character be formed without correspondingly high and noble principles as a foundation to build upon. Although we, as Canadians, do not, like the people of Europe, recognize a constituted nobility as one of our social institutions, yet we do recognize nobility of character, and we are most happy in thinking that it is an attainment that is frequently found in its highest development in the happy homes of our people. Thanks to our free institutions of State, and the favourable circumstances of school and home, we have the possibilities among ourselves of the highest moral and physical development.

Recognized high character is found to be absolutely necessary for the business success of men among their fellows. A man may be ably endowed with intellectual abilities from his birth, and be possessed of many fine personal charms and graces, accompanied by a large and ample inherited fortune to gratify all fond ambitions, but without a well-formed character for probity and uprightness, they will all in the end slip from under him like a stone from under the wall, and leave him but as a tottering fence and a shattered piece of shakey humanity. Fruit growers of our country! I appeal to you. When did you ever know one of your number that was intelligently devoted to his interesting business that was ever shipwrecked by it? Has not the very elements of our business a tendency from the beginning of it to form and ennoble character? I knew in the range of my large experience one man with a coarse and ungenerous nature, that took to gardening in as fine and beautiful a spot of earth as the sun ever shone upon, but he was not a success. Another born to as fine a fruit inheritance in our country as it is possible for the heart of mortal to desire, and yet is suffering from a moral plague, he is not happy. Do not facts of observation like these sufficiently attest, that without a firmly and broadly-laid character for nobility and honour, the fairest prospects are abortive and but a bubble. How often have we lifted our hearts in deepest thankfulness to the "Giver of all good," that we had a business, and that it was at once so pleasant and so fruitful of exalting good? Can you not all agree with us in the utterance of this proud sentiment, and be thankful for the reflex influence of your profession upon you? But to come closer to our theme, we may look at it in some of its prominent features and particulars. In our profession

as Fruit Growers, we are taught to cultivate in the most approved methods the manly virtues.

1st.—THOUGHTFUL STUDY.

There is little doubt but that the cultivation of intelligent thought is the key to success in any legitimate business, but how much more is it emphatically so in ours? The very elements that we have to deal with and the grandeur of the results sought to be obtained, puts success utterly out of the question without this first article of our creed. What makes such glaring differences in the life-work of one man over another? Deep, studious, intelligent thought. How easily and cheaply are we taught to think, to reflect, to study in the work of the garden, the orchard, and the nursery. Even the poorest and the most neglected may come and learn, and ultimately attain to high and honorable results. A man who wants to become a lawyer, a doctor, a clergyman, or even a school teacher of our dear children, he finds at the very threshold of his ambitions a very formidable and discouraging difficulty, and unless his friends come to his assistance a difficulty that he cannot surmont. Is this discouraging difficulty at the threshold of Pomona? No. Here a man with an honest soul in him and a disposition for honest effort, may walk in and labour for his own good and one-quarter good of others, and his name become enscribed on the temple of *fame*. Thoughtful study is the sunlight that guides and stimulates us in our efforts, and it is the golden key that unlocks the hidden resources of the earth and makes them available to our best uses.

2nd.—MANLY INDEPENDENCE.

This is a foundation stone of great importance in the formation of noble character; without it comparatively nothing can be achieved, either for his own fortune, or the fortune of others. He simply becomes a mere underling in society and a mere parasite upon her productive industries. But on the contrary, under the influence of this ennobling trait of character, how admirably the man goes on from step to step in the development of his own resources to become a blessing to himself and also to others. Fruit growing is perhaps the very best employment for the full and healthy development of the muscular and mental system, and by it the manly independence of the citizen is most surely brought out. He is made to feel from the very start in his career, that if ever he succeeds at all it must be alone by his own honest efforts, manfully put forth. Some difficulties there are to be overcome, and some disappointments there are to be met, with a firm and resolute will, before the desired prizes can be reached. A gentleman said to me a few days ago, "I think Mr. Gott that you make a good living easier off your small farm, than I do off my large one." "I beg to tell you sir, I said, that you are entirely mistaken in your estimation, as it is not by any means a question of ease, but a question of means to ends. If you took only a-quarter of your fine farm, and by skilful effort managed it as fruit growers do, there is nothing to hinder you to live as easy as they." This idea rather staggered him.

3rd.—INDOMITABLE PERSEVERANCE.

This is a characteristic of the successful man in any business, but much more so in the business in which we are engaged. Some one has said, "Be sure you are right and then go ahead." This will very appropriately apply in the present instance. The very nature of the business of fruit growing requires careful proceeding and constancy. If the man's plans are like the early snow, or like the morning dew that soon melt away, failure to him is inevitable. Difficulties there are, as in all the paths of life, that will arise in his horizon like dark clouds that foretell coming doom, but these must be manfully met and overcome. As fruit growers, plan wisely and push energetically, and let nothing daunt you in the accomplishment of your work to the end.

4th.—INTELLECTUAL CULTURE.

This trait is somewhat different from our first one, as it indicates results rather than means, and is the end to be aimed at by all our thoughtful studies. It is a polished stone, a choice corner-stone in the structure of character. What other calling can you point to that at once offers so many fine opportunities and so many inducements for the manly cultiva-

tion of this personal adornment? Surrounded by the beautiful and the gorgeous in nature, and dealing daily with the most intricate and subtile forces, he is bent on the most astonishing results. Planting, training, and pruning, cultivating and tenderly ministering weekly and monthly to the prized objects of his desires; what fine opportunities for profitable study and for mental discipline and culture? Means are to be suited to ends in processes and operations. Differences in requirements and needs, in texture and composition, are to be observed and noted. Qualities and points are to be estimated and valued. The modes of operation and experiences of our fellows to be consulted and pronounced upon, and all for the training of the intellect and the formation of the judgment with a view to ultimate results. In connection with this beautiful theme, I would not for a moment overlook the admirable advantages that the practical fruit grower daily has of becoming more and more acquainted with the various insect tribes, in all their variableness, their beauty and grandeur. From the earliest of the season to the end of it, what a gorgeous panorama of insect specimens are brought successively before our observation? Wonderous moths and their frequently changing and destructive larvæ; exquisitely coloured butterflies and their varied and numerous progeny; beautiful beetles and buzzing gnats, in almost endless variety and beauty, are constantly passing and repassing in ever-changing activity before him. Only think what an element this is in the process of intellectual culture and what it is worth. What would the devoted scientist give for these fine opportunities! Why, if he had half of the grand chances that we have for observation and inspection of modes and processes among the insects that flutter around us, he would be ready to think that he was the favoured one of all his brethern. Let us open our wondering eyes to their grand attractions, and by our fine comprehensions let us show that these favoured lessons are not lost upon us.

5TH.—BUSINESS TACT.

You will all know readily what this item means, and you who are fruit growers by profession, will also accuratly estimate its value. Business tact is a practical trait, and to its possessor invariably means success. Woe be to the man who launches out in any business without it! The end will be disappointment, empty coffers, and vexation of spirit. Can any calling be better calculated in its very elements than our calling, to bring out to its fullest extent this business quality? We think not.

6TH.—HABITUAL INDUSTRY.

I am now afraid that some who have patiently followed me to this point, will now turn away at the mention of it, as it is commonly thought to imply something that in our day is not over popular with many. Patience friends, do not turn away, the deformity is only on the outside. It has no power to hurt you, but only to do you good. You, however, who are fruit growers know well the worth of this practice and how much you are indebted to it for all you have and are. You know that had you been afraid of habitual industry, you never could have been where you are at the present time, enrolled among the benefactors of your land. Be not deceived, my brethren, "from *nothing, nothing proceeds*," and without industry constant, indefatigable, untiring industry, there is not a spectre of a hope for many of us. It is said that "labour is the wealth of the State," if this be so, let me ask you how much of the wealth of this great nation have we contributed? For let him know that he who contributes to the resources of his country, is brightning his own prospects. Again, "labour is her own reward," and each of us gets the rewards of our labour whether they be many or but few. Work on, therefore, you faithful fruit growers, your habits of industry are as a never-failing bank of ample resources to you and yours. To the man who is afraid of work, I may say, "let him keep clear," never enter here, for there are no laurels for you and your unproductive life. But lastly,

PROUD SUCCESS.

What can be more captivating than a climax like this? Is it not what you all are labouring for, and the thought of which nerves you to the direst attacks? Statesmen,

lawyers, artificers, menials, from the highest to the lowest ranks of society, what but for this are you straining every nerve and jepordizing even your lives? Let me say, "enter these fair and beautiful fields;" devote your energies to horticulture and the good of your race, and in becoming producers of beautiful fruits, your success is accomplished, and your names will be emblazoned on the fair temple of fame as benefactors of your people. Instruct your children in the arts so pleasant, your sons and your daughters, that they may proudly look to their fruits and their flowers, and point them out to their friends with happy mein. So shall you be bestowing blessings on generations which are to come.

Having glanced at some of the more prominent of the manly virtues that are largely encouraged and educated by a life given to the cultivation of the delicate and beautiful fruits of our climate, I wish as briefly as possible to proceed to other considerations which, I may say, I had for a very long time in my deep reflections: "*Fruit as a Character-Builder in its Integral Elements.*" I am not quite sure that I shall be enabled to make this statement sufficiently clear to be understood. I will make the effort as best I can. I mean to say that by habitually using fine and savoury fruits in our food and as our food, our temper and disposition so largely depending on the corporeal formation will be modified and tuned by its savoury influences, and thus the character of the man will be determined. We hold that fruit in its very elements is to be used not merely as a luxury, that we can do either with or without, but rather that it was originally intended by the Allwise former of our frames, and by our intuitive desires, to serve a felt and important purpose in the economy of our natures. That fruit is to be used by us as a daily food, a something to be used by us in addition to other substantial food elements, to nourish our bodies and build up the parts, to modify and rectify by their fine and powerful juices, the tastes and dispositions of the growing and future man, and also to help him in his development of intellectual and moral qualities to form a noble, personal character. Our common and classical literature is teeming with allusions to this same idea of the use of fruits. In Milton's inimitable work, is a fine and masterly description of Eve's table, when to entertain her august guest—

> "She gathers tribute large,
> And on the board, heaps, with unsparing hand,
> Fruits of all kinds."

Again, Adam in his address to the angel visitor, is made to say—

> "Heavenly stranger! please to taste
> These bounties which our Nourisher, from whom
> All perfect good, unmeasured out, descends,
> To us for food and for delight hath caused
> The earth to yield."

To whom the answer is made—

> "Therefore what He gives to man in part
> Spiritual, may of purest spirits be found no ingrateful food;
> And food alike those pure
> Intelligential substances require,
> As doth your rational, and both contain
> Within them every lower faculty
> Of sense, whereby they hear, see, smell, touch, taste,
> Tasting concoct, digest, assimilate,
> And corporeal to incorporeal turn."—*Paradise Lost*, Book V., Can. 410.

As this extract from our sublime epic poet is so applicable I have thought best to introduce it here, as it is by this means said much better than we could possibly say it. But to proceed, we hold further that fruit is to be used as a builder and former of these fine tissues and organizations of the body that largely determine temper and dispositions, as the organs of the brain and of the nervous system. It is perfectly surprising to the observer how far a certain line of food habitually used will determine the character of the man who uses it. All of you will have observed instances of this kind, as the brewer, for instance, and the butcher, in your daily walks of life. We do not say that noble character may be or even is wholly indebted to the influence of food for its formation, as there may be so many subtle influences engaged in forming it, but we do most unhesi-

tatingly say that it is without doubt a very active factor. I will leave this subject to your kind consideration, to be thought out individually—each one for himself to determine how far or how frequently he shall use his fruit as his food. With your indulgent permission I will proceed briefly to state another favourite article in our creed—

FRUIT IS THE ANTIDOTE FOR THE USE OF ALCOHOL.

I need not stop to tell you that as a people we are much addicted to the use of alcohol as a stimulant in health and diesase. This is manufactured from our grains, and is felt to be really needed by us in our peculiar condition of climate, society, etc. How far this is really the case that it is needful, I suppose you will vary in your opinions; but I may say I know you do not, as intelligent fruit growers, believe it. Yet there are some who do believe it. We believe on the contrary that it is a useless expense, and a very pernicious habit, and some men are making thousands out of its manufacture and sale, to the injury and ruin of their fellows. This article is not friendly to the highest development of our nature, and is the direct cause of the degradation of thousands of our species. We must meet it as a fact already established in our midst, and we find we cannot cope with a habit so general and so formidable by a simple enactment of Parliament. Our theory is to produce better fruit, and more of it, and place it within the daily reach of all classes of society, and at all seasons of the year, and at all periods of their lives. This is the idea of our life, and we feel that we are steadily gravitating to this idea. Commence with the young, and teach them early to love fruit; for a man with his tastes all burned up and vitiated by the use of alcohol has no savour left for fruit. I never knew a drunkard who had the slightest appreciation of the fine flavours of fruit, or either a man who is habitually in the use of tobacco. If we could get our people habitually to use in their food rich and luscious fruit, possessing mild and nourishing juices, just slightly stimulating, and nerving to the system, and building up with healthy material, we feel that the use of alcohol would soon be found to be what it really is—a poison—and not a food, and consequently no use found for it. My friends, have you ever thought seriously upon this question? If practicable, are we not on the high road for the highest achievement that is possible to work out for "our generation." I feel great confidence that you will all readily grapple this point, and heartily work for it, as well you may with right good-will. In this connection, I am most happy to think that I know in my large acquaintance of fruit growers very few that are either habitual gluttons or habitual drunkards in the fraternity. This is a good mark; let us be thankful for it, and proud of it, and let us labour to preserve it as a distinction of our favourite industry. On the other hand, prosperity and happiness both in our possessions and our families seem to be everywhere the rule and not the exception. Thanks for this; it should make us increasingly contented and happy with our lot. One more point and then we are done.

FRUIT IS A NECESSITY OF OUR MODERN CIVILIZATION.

This is a theme in itself, and the most pregnant of fine thoughts we have yet looked at, and it is everywhere established by our daily observation. Our modern civilization—how stately is its ownward march, and how grand and noble are its modern achievements? But yet without fruit even its foundations would be undermined and the fair structure would soon totter and fall to the ground as a mere wreck. Everywhere and among all classes there is felt deep down among their needs the rectifying and refining influences of fruit as a condition of life, and fruit, too, that is worthy of our time and of ourselves. All need it—both male and female, both old and young, both black and white, and bond and free. Both the sedate and the gay, the learned and the illiterate, the wise and the unwise; and from whatever country, or nation, or clime, or people, or tongue on the surface of this fair earth. All need it, and for their best interests must have it or suffer. As our matchless civilization moves onward with steady pace and firm step, the use of fruit as a concomitant will increase and march along with it. As fruit acts upon our civilization so our civilization reacts in turn upon our fruit. The fruit helps our civiliza-

tion in her onward march over the masses, and the civilization in turn as kindly encourages the production of better fruit. You see, brethren, that it is a fine, mutually-assisting march, and the one, like the married pair, cannot advance without the other. Have you confidence and faith in our civilization? Have equally steadfast faith also in fruit. Encourage her to the utmost of your ability and power to work, for she is the handmaid of the civilization of our country and time.

Bring deep-penetrating, many-eyed science to help in the production of good fruit by her researches into the hidden mysteries of nature, and into the hidden forces of her secret developments. Only by asking she stands ready and willing to help you in your arduous and honourable work. Does the Artificer in the various forms of industrial life need the active and effective aids of scientific research? How much more so do you need her? We are thankful for what has been done for fruit. Do you not now grow more fruit and better fruit than you did a few years ago? I am afaid there is something deeply amiss if you do not. More is needed, and much better. Science is advancing, our admirable civilization is advancing; knowledge, in all its ramifications, is advancing; the noble and essential art of fruit growing must also be advancing, or where shall we hide our defamed heads for very shame. The use of fruit is increasing with our prospects and growing with our growth. Where is the supply to come from if we are listless or inattentive to the urgent demands of our popular interests? What has nature to help us, not done for us? Has she not given us as fair and fruitful fields as ever fell to the lot of man to possess, or ever the sun shone upon? Does she not give us as timely and copious rains, and as refreshing and richest dews as ever fell on fair leaf or flower? Where in all the fields of creation on the bosom of this earth will you find the genial influences of life-giving sunshine like to ours? Are not all these influences in every way adequate, and just exactly what is needed for the fullest and finest developments of noble fruits that ever touched the fair lips of exalted manhood? Where would you prefer to live to carry on your high calling to most happy results if not here? Talk about the handsome specimens of fruit produced in the expensive fruit-houses of Europe. Can they, after all their boasted beauty and loveliness, come up to ours? My friends, if you are not successful in the production of large quantities of the best of fruits, that will favourably compare with those of the East or Western Indies, the fault must be yours, and the sin must lie at your own doors.

In conclusion, let me say, take fresh courage. Look to your interests, and awake to the true position and nobility of your calling. The world needs you; let it be felt that you are not living here for naught.

B. Gott.

ARBORICULTURE.

The following paper was then handed in:—

ARBORICULTURE.

I am pleased by the propounding of this interesting question for discussion, though it be ever so humbly done. The idea of the planting of trees and the equally interesting idea of results and the advantages to farmers are so prepossessing to our minds that they at once elicit our most devout respect. Advantageous to farmers! How can anything be advantageous to them that is not equally so to the great mass of the community? Is not the welfare of the whole of society identified with that of the farmers? We assume therefore, that whatever is an advantage and a blessing to the farmers is important and essential to the interests of all other men. Let us hail, then, with supreme delight any means or any course of conduct that promises results and advantages to the farmer. Away with that miserable, narrow, and ungentlemanly feeling that would deprive a farmer of pleasure and advantages simply because he is a farmer! Such a sentiment as this cannot possibly live in the clear and glowing sunlight of our blessed civilization. It can only live in the darkness of ignorance. In looking at the question of tree-planting, I can

scarcely conceive of it as a question of advantage or of disadvantage. To my conception it is rather a question of position and felt need, and not something that we may or may not do as we see fit, but something that is forced upon us as a necessity of the times in which we live. Tree-planting must be done on a large plan and systematically, if we would enjoy the fruits of our fields and orchards and the quiet of our peaceful homes. A glance at the condition of wretchedness and want of deforested China and Japan, which have in times past so wantonly destroyed their rich inheritanc of forest wealth, is enough to make us tremble at the mere prospect of the like befalling our homes and our fair fields. Let us be armed in time to evade these calamities! What, we may ask, is becoming of the once famous, unmeasured, and boundless forests of Canada? Are they not fast disappearing? What are we, who are reaping these harvests of wealth, trying to do to replace the fine old trees for future generations? Where are our acres of young and thriving forest trees? Our beautiful and defensive belts of trees along our highways and around our orchards and fields, and around our homes? I know it is difficult to find them, and that we are not doing our duty in this matter to those who are to succeed us?

Let us then as briefly as possible consider the best way to commence the business of tree-planting. When we are convinced of our duty to plant trees, the first thing we most certainly want before any decided steps can be taken is a supply of young trees to plant. A want of these has deterred many a good man from planting trees at all who otherwise would have done so. To overcome this difficulty a little timely forethought is necessary. The seeds of our forest trees fall plentifully around us, and we can have them merely for the gathering up. The seeds, if properly secured in mother earth, will produce for us all the young trees that we may need whenever we feel our better nature prompting us to plant. It is calculated that 100 feet square of good land covered with the seeds will produce enough of young trees to plant 100 acres! Only think how prolific in her returns kind nature is to us! When her capabilities are properly husbanded for our interests we are perfectly astonished. "These tree seedlings" planted out in well-prepared ground, four by four feet, or 2,722 trees to the acre, would soon grow up to be a sight of beauty to our country and a source of wealth to the cultivator and fortunate possessor. Suppose a few acres, say ten acres of each of our 100 acre farms, was devoted to trees, even at this rate of planting, what a magnificent growth of fine young timber—just what the country needs—might soon be produced. A belt of trees standing one rod apart round each of our 100 acre lots, would contain 560 specimens to be an ornament to the inheritance and to bless the hand of the provident planter. Prof. Brown, of the Agricultural College, Guelph, has shown that in our country the prevailing winds that bring rain are from the south-west to the north-east. According to this showing it is clearly our duty to plant belts of trees along the north and west sides of our lots, to obstruct the fierce winds and to attract the moisture they may contain. The plantings may be in the following order:—First, a row of maples or basswood, or elms four feet from the line and one rod apart; secondly, ten feet from this row may be planted a row of Scotch or Austrian pine, and one rod apart; thirdly, ten or fifteen feet from this row may be planted a row of Norway or black spruce, so that they will intercept the spaces in the pine row. If it is thought best to fill up the spaces between these plantings as early as possible, low-growing shrubbery may be planted in among them. This will make a useful and beautiful belt, and while it is growing up and coming into service will be increasing in beauty and efficiency every year. The system of hedge-planting is also another way in which tree-planting may be made very useful and very beautiful. For this purpose the best sort of trees to use may be either buckthorn, or honey locust, or berberry, each being well-known as the best hedge plants known in our climate and conditions. For low, damp, or swampy lands, or even for rough, stony, and uncultivable lands, the planting of trees for coppices is a most profitable exercise, and will well repay any amount of care bestowed upon it. The timber for those purposes must be those that will readily sprout again from the bottom after being cut off, as basswood, or ash, or elm, and some of the oaks. Surely there is enough said in this short sketch to interest any man of ordinary attainments in the matter of tree-planting. But should any further inducements be required, and as we are a matter-of-fact sort of people, I will attempt to show

THE RESULTS AND ADVANTAGES.

Here let me say that in the very limited space at my command I scarcely know how to do anything like justice to the following important propositions, as each of them are ample and full for a theme in themselves. They are each of them big with fine practical truths and lessons in themselves, so that if I should attempt to open up with any degree of fulness I would require more space than I have allotted to my whole subject. Suffice therefore with mere suggestions of the advantages of tree-planting on our farms.

TREES FOR ORNAMENT.

First.—The ornamentation of the farm. I feel confident that I am addressing myself to an intelligent and appreciative class of men, who will be willing to admit this idea for its full value to them on their farms. You know that your farms are worth more for your efforts at improving and beautifying them, not only for to market, but also for your own personal use. You know that they will sell readier, and that they will bring you more money when sold, for the beautiful trees that are planted upon them. You yourself would not take much money to have those trees removed that your own hands have planted and you have watched with care. In all our sterner thoughts of life we cannot afford to altogether ignore the beautiful in nature and the beautiful in art. To you "A thing of beauty is a joy forever," as well as to the rest of humanity who are even now panting for the beautiful. Again, "Life without beauty is a dead and unwholesome thing"; and again, "Trees are fit to minister to man's manly sense of beauty." These are the modern expressions of the deep and hidden sense of the beautiful lying under our sterner natures, and which are so successfully ministered to by the grand and majestic beauty of the living plant or tree. The man who could pitch the dwelling, designed for the abode and resting-place of his family, in a drear and open field, treeless and flowerless, is a long way behind the æsthetics of the age. If he is content to leave it so, he has spent the foregoing part of his life for nothing, and has yet everything to learn respecting the beauty of this life. We know that men are alive to their best interests, and that they must and will plant trees around their farms and their homes for beauty and for use. Everywhere we see encouraging examples of movement in this direction, and much may they be extended.

THE HOMES OF THE BIRDS.

Second.—Trees are the homes and meeting-places for the birds. Every farmer in our vast domain will at once see and recognize the force of this proposition. Birds are the children of the air, and lodge among the branches of the trees. If there are no trees, with their wealth of beautiful branches, on our place, we can have no birds. If there are no birds there is no restraint upon the millions of devouring insects that are ever ready to prey upon the crops that the honest farmer needs for his bread and his money. So the relation between tree-planting and the farmer's pocket is established, and is intimately close—closer, indeed, than some of us are aware of Let us remember that most of the small and beautiful birds that warble among the branches of the trees, are insect-eating birds, and are most intimate and devoted friends, ever working for our interests. Let us encourage them and their friendly efforts for our good in every possible way by planting trees for their convenience. The tree and the bird! How astonishingly beautiful these organized objects of kind nature in their life and their work! Both of them are grand conceptions of Infinite wisdom, and are worthy of our attention and careful study that would fill volumes of scientific and useful teaching. The tree and the bird! How intimately close is the relationship that exists between the deparments of the natural world, between the vegetable and the animal kindgdoms! Between the merest vegetable and the highly organized beauty of the air. This relationship is easily traced, the one ministering to the daily requirements of the other. Would we have birds to cheer and to bless us, let us plant liberally the trees they love.

FARM ECONOMY.

Third.—The economics of the farm requires trees planted. I am sure there is no farmer but will appreciate this statement, and will immediately pluck up his ears at the mention of it. By the economics of the farm, however, I do not intend the discussion of the most advantageous ways of feeding stock, or the best breeds of horses, cattle, sheep, etc., to keep for profit, but rather what are we going to do with those waste lands on our farms that are too wet and mucky to be used for the culture of grain, or that are too rough and stony to admit the plough? These are questions of much importance to us, because every acre of our farms has to be paid for, and every acre is liable for taxation; and consequently we of all men can ill afford to allow any of it to lie idle. We want it all to bring in something, and something that is useful to us. We advise you to plant the low mucky places with Canadian larch or with black ash, or with elm or willow; and besides turning a dismal swamp into a field of beauty it will soon be a source of great profit to its owner. The thousands of acres of rough, stony, and useless land of this country should be planted as early as possible, though in ever so rough a way, with young seedlings of oak, maple, or even black walnut. It would soon astonish the most incredulous to see the quantity and suddenness of the growth and profits arising from these discarded eyesores of the farm. Farmers of our country awake to your best interests! Allow no stagnant miasma holes or useless eyesores on your place to destroy the symmetry and beauty of your lovely farms. Plant them with trees, so shall they be to you objects of pride and satisfaction, and blessings to your country.

TREES FOR HEALTH.

Fourth.—The healthfulness of the farm. At first sight you may perhaps think that now you have me, for since the farm has been cleaned up of its trees you have never once had an attack of ague and fever in yourself or your family. But stop my friend and consider for one moment. The trees on your place were not wholly responsible for those cruel attacks of shaking ague and still more dreaded fever. It was rather your sudden onslaught on the enormous crops of vegetation everywhere around you that caused it. Cleaning away the timber, letting in the sunlight and the resultant decay of vegetable matter everywhere filled the air with the germs of disease, and you took it freely into your system until it almost shook the dear life out of you. Let not the recollection of this dishearten you in your efforts at planting trees, for they are a source of healthfulness and blessing. We say in all candor plant them on the farm and town lot for healthfulness. It is well known that trees in their growing action absorb large quantities of gases from the earth and from the air. These gases for the most part are effete animal exhalations that have served a purpose, but are now given off from our bodies as useless, and worse than useless to us. These gases are the very life of the trees, and are absorbed by them in large quantities. Again, the trees give off gases that are useless to them, and these gases are the food of our life. Only think of an arrangement like this in the infinitely wise economics of nature! The vegetable and the animal—the one mutually dependent on the other, the lower form living for the higher, and neither of them living for itself. We have thought that a small but wild plantation of trees as a coppice on the lower end of each town and village lot would be the very best advice that could be given by our boards of health. How much effete and decaying vegetable matter are recklessly thrown out in the back yards of all our town lots, and left to decay and poison the atmosphere we are hourly breathing for our life?

Its deadly influences are sometimes felt by us and the dear ones of our family circle, when attacked with the varied forms of acute inflammations, or with typhoid fever, and the more dreadful diphtheria. A coppice of wild trees, interlaced with wild vines and creepers just at the lower end of the lot, would be a calm retreat from the scorching heat, and a reservoir to utilize all the poisons and pestilences of the atmosphere How simple the remedy, and yet we are paying the debt of our negligence of the specifics of nature. Blocks of trees and belts of trees on the farm would answer precisely the same purposes, and be an everlasting fund of satisfaction and of pure enjoyment. Farmers, let us plant

trees for healthfulness for ourselves and for our families, for what are all the wealth of your coffers of gold compared with the unspeakable blessing of health?

THE MODIFICATION OF TEMPERATURE.

Fifth.—It is very generally admitted that trees have the power of absorbing and storing up latent heat, and again giving it out in times of extreme cold. If this is so, and we fully believe it is, how fine is the modifying influence that may be exerted on our climate in its depressing moods? Again, it is believed that the tree has power of absorption of moisture, and in a time of severe drought again giving it out liberally through its trunk, and its branches and leaves in the summer time. This influence ascribed to the tree has the effect of cooling and moistening our dry atmosphere during the heated term. This view presents the tree as an enormous laboratory, utilizing heat and dispensing coolness and moisture to correct the extremes of our seasons. By the simple means of their agency the extremes of temperature endured in every treeless region may be corrected. But further, we have sometimes thought, while sitting under our spreading beech trees in the intense heat of summer, that there was always a cooling breeze there, and consequently that they were attractive to coolness and breeze. Have you not many times been struck with the same idea?

If we had the space at our command, we would like much to enlarge here on the subject of wind-breaks and storm-stayers, etc., in relation to trees. We are more than certain that the agency of trees is the most efficient and effectual wind-breakers that can be adopted. We are almost as certain that the same gentle influences may be credited with the cooling and refreshing moisture of many a summer shower that visits our plantations. When shall we arrive at a correct understanding of the great laws of nature, and the governing forces of the world? When shall we learn the proper relationship of one part to another in the arrangements of nature? How can we have the blessings of a fertile and fruitful country without the agency of trees?

DISTRIBUTION OF ELECTRICITY.

Sixth.—The distribution of electric fluids in the air. The subject of electricity is a mysterious question that we cannot fully understand. Yet we know that the vast treeless plains of our continent are frequently visited with those destructive influences and the deadly lightning bolt. The great prairies of the west are annually visited by those alarming displays of nature, to their serious loss and the discomfiture of the people. In tree-growing regions these displays are less frequent and less severe. Our advice, therefore, is to plant trees around your fields and around your dwellings to ward off the influence of destructive lightning.

TREES FOR SHADE.

Seventh.—Trees furnish a friendly shade and cooling breezes for the farmer's children and his cattle. As we have already anticipated this item to some extent, we will here simply say that for this use alone trees will pay far more than they cost. Is it nothing to you that your children have not the cooling shade of the spreading beech trees, or the more emblematic maple, under whose spreading branches to enjoy their healthy sports at mid-day in the height of our heated season? Is it nothing to you that your cattle of pure blood, your horses of noble ancestry, and your sheep of finest clip, are left out standing in the melting heat in a friendly fence corner, and without the grateful shades of one spreading branch over their defenceless heads? Oh, I know you count your interests better than this, and though you would not for your children, yet for your horses, cattle, and sheep you will provide the grateful shade that blesses them in the burning noonday. Plant trees.

TREES FOR TIMBER.

Eighth.—Trees supply timber, poles, and brush for the use of the farm. Oh! you say, this is a glaring statement. It will take years upon years after I am old, to grow timber, etc., for the use of the farm from these trees, and we will never see any benefit from the trees we plant! Stay, my friend, this is entirely a false impression, and one not supported by the facts. A gentleman, in a paper read at the late Forestry Convention, at Montreal, stated that Catalpa trees can be profitably planted as close as four by six feet, and at the end of ten years from planting, one-quarter of them can be taken, and will each make two fence posts valued at ten cents each. We know from our own experience that trees planted on good soil, and doing well for this length of time, will come into considerable usefulness, especially for poles and brush for the farm. In passing through the county of Prince Edward a short time ago, we were amazed at the size and beauty of their fine trees planted on the roadside. These trees, mostly our beautiful sugar maples, could not have been planted many years, and yet they were from twelve to twenty inches through at the bottom, and were fine spreading, handsome trees, and an ornament to any country. Be not, therefore, so easily discouraged. Kind nature is generous of any assistance given her, and what can be done in this county can also be done in any county in Canada. Plant trees, therefore, as nature can do nothing for the man who will not help himself. If you help her, she will reward you with the proudest and most satisfactory results to crown your feeble efforts. Try it!

TREES AND PRECIPITATION.

Ninth.—Trees are an encouragement to rainfall and water supply. This is now become a settled principle in the creed of understanding tree-planters, and our observation teaches us that it is correct. It is authoritatively stated that through trackless regions of the Muskoka district, rainfall and water supply are abundant and plentiful, and solely on account of its dense forest growth. This is in exact keeping with our past experiences in western Canada, as we all quite well recollect. Is it so with us now? Where are the flowing streams that were once flush? Where are the bubbling springs bursting forth from every hill, and flowing across our pathway? I know you will look for them in vain, for they are dried up and their sources are emptied. Again, it is stated that the region of country lying between Lake Ontario and Georgian Bay is especially left to welter in its intense summer droughts, and mostly on account of rapid clearing of the country.

Trees by means of their influence on the atmosphere increase the amount of condensation of moisture and precipitation. Again, by means of their roots and their action on the soil, they check the force and injury of torrents, and by rendering the ground porous and open, largely drink it in, to be given out again and again when and where most needed. But again, forests, by means of their abundant foliage, evaporate or throw off enormous quantities of moisture into the air, and this, after being carried about by the winds, is condensed by the coolness of evening, and falls plentifully upon the neighbouring country in the form of pearly dew. So the action of the trees and the reaction of the atmosphere is constantly going on, and every time man receives blessings by the mysterious arrangement. Plant trees for moisture.

GENERAL BENEFITS.

Tenth, and lastly.—By planting trees for ornamentation and shade we shall have more fruit and better fruit, better crops of grain and grass, and better horses and cattle, and more pleasure and purer enjoyments in life. We need trees around our orchards to give out warming and tempering influences in the spring time, when the trees are covered with tender blossoms, and the air is loaded with pinching cold. We need the presence of trees around our fields and our homes in summer to condense the cooling vapours, and to invite the pleasant zephyrs to fan our parched brows. More especially we need the presence of trees in our winters to offer a calm resistance to the raging blast,

and to shelter the tender buds of our fruit trees from the withering cold and killing frost. We need their grateful presence around the home of our loved ones, for their presence is cheering to our eyesight, and it is a relief to look upon them while nothing but whiteness is all around. Only for one moment let us imagine the total eradication of all our blessed trees from the surface of our fair country, and what would become of us? Let us each in our humble way strive to add our humble mite to the sum total of our engagements of this humble life below, by planting a few trees to live and testify of us after our heads are laid low, and our hands are still in everlasting rest.

B. Gott.

The following paper was presented by Mr. Alex. McD. Allan, of Goderich, on

APPLE ORCHARDS. PLANTING AND AFTER CARE.

In choosing a site upon which to plant an orchard the best exposure for that particular section of the country should be selected, and the land should be well underdrained, as low wet lands induce disease both to wood and fruit. The orchardist must himself possess taste in order to lay out properly a well selected ground. A well laid out orchard adds beauty to any home, and greatly enhances the value of the farm. But an orchard is only beautiful when the trees are set in rows perfectly straight, every tree standing upright, properly trimmed, and the land well cultivated so that, be it in spring when covered with gorgeous blossom, or autumn when laden with rich fruit, it presents a picture that readily attracts the eye. But who was ever charmed at the sight of an orchard rough and uncultivated, some trees standing at an angle of forty-five degress, some heads pointing in one direction and others in another, roots appearing here and there above ground, and torn or half-broken limbs hanging from occasional tops!

In selecting varieties the orchardist must consult the market demand as well as local consumption. As a rule we find too many early summer and fall varieties planted, and too few good winter keeping kinds. It is only within the last two or three years that our early apples have been profitable to the grower in many sections, as the crop has generally been far in excess of the local market demand. But now that the evaporation process has been fully established and perfected, these varieties are becoming more profitable. I believe too that as our North-West becomes populated a market for all our surplus summer and fall apples will there be opened to us. But notwithstanding all this I believe there is more money to be made by consulting the demands of the British markets for winter fruit. It is well known that in no country in the world do we find apples of so exquisite a flavour, and so rich in colour and flesh as in our own Province. Our leading winter varieties stand at the top of the list in competition with other countries upon the markets of Britain. We have an article that is in keen demand in that market, and the price is generally a secondary consideration. So long as the sample is choice no price is grudged that cash can cover. If I were planting an orchard in my own county (Huron), based upon my experience in shipping apples for the past few years I would plant a thousand trees of the following kinds: Baldwin 500, A. G. Russet 200, Spy 100, King of Tompkins County 50, Wagner 50, Canada Red 50, Ribston Pippin 30, Mann 20. This would form my orchard for profit in shipping to Britain. To complete this I would add for home consumption and possibly a few for local market, R. I. Greening 2, Wealthy 2, St. Lawrence 2, Duchess of Oldenburg 2, and Early Harvest 2. Orchardists make a very common mistake by planting too close. I consider forty feet close enough for an orchard of standard apples. It is possible that more profit per acre would be realized in the first few years of bearing at thirty feet apart, but when we know that an orchard planted and properly attended to will continue to give good bearing results for more than a lifetime of man, and when we see how orchards planted at twenty-five and thirty feet spread both roots and branches to meet each other, and then in spite of attention in cultivation and trimming they fail to give, either in quantity or

quality the fruit results of former years, we can readily see the reason to exist in a lack of space where the sun and air can have full scope to exercise upon tree, earth and fruit those influences that are so essential. Besides where there is liberal space the roots and root fibres continue, even when the trees are old, to feed in a living soil. We have often observed that in old closely planted orchards even grass becomes sickly and the soil sodden, and clammy for the want of air and sunlight. Yes, I believe we must have sunlight and free circulation of air in an old orchard if we desire both fine quality and large crops of fruit and continued growth and health of wood. Roots of trees planted thirteen to sixteen years will, in ordinary good soil, extend about twenty-six feet and sometimes farther in all directions, so that even when planted forty feet apart the entire ground is occupied.

It is absolutely necessary after planting an orchard to at once proceed to train it up in the way it should go. Systematic yearly pruning should be faithfully followed. The aim should be to hold the tree to a good form, trimming outer limbs upward and the centre outwards, so that in looking down into the tree the head is in good form, open and well balanced. Much mischief is often done by pruning only once in three or four years as this necessitates cutting out large branches. Opinion varies somewhat as to the proper time for pruning, but for the majority of growers the month of March is probably the most convenient season, there being then nothing specially pressing in other departments of the farm. We frequently see old trees topgrafted to get a better variety, or because the fruit has become small and spotted, doubtless from sheer neglect of tree and soil. Look at many such an orchard in three or four years after, and you will see that these grafts have been allowed to grow and spread after their own sweet will without regard to form or comliness, until the tree top is formed again as dense and unfit to bear good specimens of fruit as before.

Whatever difference of opinion there may exist as to whether or not orchards should be cultivated after they have grown to fruiting years, all will readily agree to their cultivation yearly when young. Such orchards can be profitably cropped for a few years with roots and corn. Many fall into error by too freely manuring a growing orchard, thus forcing wood growth to such an extent that it cannot properly mature, and hence such trees often fall victims to disease and death. It is sufficient that the soil is cultivated, and if not already rich enough, that manure be added to produce a fair, healthy growth of wood, anything more than this would be forcing an unnatural growth. But when bearing begins manure should be applied liberally, and occasionally a good dressing of wood ashes. A broadcast sowing of salt every second year has the effect of bringing out the colour more distinctly in the fruit ; it also toughens the skin and combines with the ashes in keeping wood and fruit clean. Besides salt not only draws moisture from the atmosphere and retains it in the topsoil in dry weather, but also draws it from beneath and thus assists cultivation in the circulation of air in the soil and protecting the root fibres that feed near the surface from the baneful effects of drought. In cultivated orchards the roots strike deeper in the soil ; but where trees are planted in grass, or the soil not cultivated, the roots are found near the surface where they are subject to the excessive cold of winter and the scorching heat of summer. An orchard should not be cropped longer than five or six years from planting ; after which I think it well to sow frequently to clover and plough down when grown to cover well. When bearing begins care must be taken when ploughing not to go deep enough to cut the roots severely, and hence instead of ploughing up to the trees many prefer to work a portion around each tree with the fork. Newly set trees should be mulched in the fall, this has the effect of protecting the roots from severe frosts as well as enriching the soil by soaking. In case mice should burrow under manure used for mulching which has hay or straw in it, a mound of earth should be raised around each tree three or four inches high.

Farmers are too intelligent now-a-days to attempt to cultivate and crop the same field year after year without returning to the soil sufficient plant food to supply that which the gathered crop has extracted. But alas, this rule that is so systematically followed in modern agriculture, is from sheer thoughtlessness, I believe, lost sight of in the orchard, as witness the thousands of farm orchards in our Province that are allowed to take care of themselves. Soon the trees have exhausted the elements in the soil necessary to pro-

duce healthy, strong growth, and clean, well-flavoured fruit. The grain field upon any farm receiving the same treatment as such orchards, would soon be in a state of hopeless bankruptcy! Speak of taxes, but where can we find a piece of property burdened as heavily as such orchards which are taxed to support a crop of wood, and either roots, grain, hay or grass as well! When thoughtless growers discover, as they soon will, that the apple orchard, when properly cared for, is the best paying spot upon the farm, they will blush crimson at the thought of such neglect.

Almost all orchards would be benefited by a storm break, but many are apt to look upon shelter for an orchard as meaning an absolute thicket through which the winds can scarcely find way. There never was a greater error. The object is merely to *break* the storms, and hence in a majority of cases instead of planting a close high hedge on the north, west or other side requiring protection,I believe the Norway spruce (which I consider one of the best trees we have for this purpose,) planted at intervals of about ten feet would answer admirably. Further than this it is a matter every orchardist must decide for himself in accordance with his exposure.

We have come to a time in the history of this Province when agriculturists must look into the matter of farming for profit with some degree of earnestness. Grain growing has been and still is a profitable investment. But now that our immense prairie possessions in the North-West are being rapidly covered with a soil-tilling population and that great country modernized by lines of railway, wheat growing will no longer be profitable in Ontario. It is time to consider the question, what shall we do with our farms? Doubtless cattle grazing and feeding will form one important branch of the operations of successful farmers in years to come. Fruit growing will certainly take a leading position, nay, I believe the first place in many sections among the crops of farms a few years hence. It is well-known that Ontario grown apples are second to none in the world in point of flavour which is the highest point of merit. In the markets of Britain where our shippers compete with the surplus crop of other countries our apples invariably stand at the top of the list where proper care has been taken in selecting and packing. Now is the time to prepare for a crop that can be depended upon to hold its own against all competition, now is the time to plant orchards, not a few trees, but large fields of such varieties of the various fruits as each particular soil and exposure is best suited for, and the home and market demand.

Mr. Thorpe Holmes, of St. Catharines, presented the following paper in reply to the question—

HOW CAN WE INDUCE FARMERS TO PLANT TREES ALONG THE ROADSIDE?

"How can we induce farmers to plant trees along the roadside?" To this query I offer a response, and that is: Protection to the trees both from men and animals.

My neighbour to the south planted his fronts a few years ago, which started very well, but such lines as were on the road allowance are gone, except very few. Cows at large were the chief destroyers. Tracks in the snow showed how one was broken—a waggon was made to take a circuit, so that the neck-yoke bore down the sapling, and the axle broke it off.

My neighbour to the east has a large frontage, by reason of a road on each side, and one across; and he told me he would plant trees but for the cost of enclosing each one. The destructive energies of boys are fearful, and I dread the holidays. A tree coming up in pasture I trained handsomely, and protected it till it was beyond the reach of stock: it was cut down, I suppose, for a fish pole. A willow planted by the water disappeared. In clearing, two wild cherries were left. By barking, one has long been dead, and the other is a wreck. One springing up by the fence, which I have cared for, has been shaved. A walnut tree, springing up outside, I fenced as long as need be; but boys have tried their axes on it, and damaged it every year by frequent trials for the nuts,

scarcely ever allowing any to mature. I am careless as to the nuts, but I am enraged as to the destruction of foliage, by throwing sticks and stones into it—poling it, and climbing into it.

Opposite the window by which I am writing, about two hundred yards across the canal, there stands a large oak tree. I saw a man once come down the hill and chop off a lot of bark, which he carried away.

The chestnut is one of the thriftiest and most beautiful of our indigenous trees; glorious to behold, especially when in blossom; valuable for rough timber, and beautiful for inside purposes; esteemed for its delicious nuts, which in some countries are a staple food. But we may not plant them here till the morals of the community improve, or till it shall be the duty of some official to prosecute depredators. The punishment should be crushing, and not measured by the offence detected, but by the damage done.

At the winter meeting of 1881 a report on fencing was introduced. There can be no arrangement by which fencing may be much diminished; and the use of barbed wires, stapled to planted trees, and between which the berries of the sweet wild brier are dibbled, settles the matter for a long life-time—gives charms to the landscape, and so far meets the question I am answering. But the fencing which keeps our own creatures in will not keep those on the road out, by reason of their greater number eating off the grass shorter.

Working on the off side of the road, in hauling manure off or crops in, by reason of having to close gates every time, is greatly hindered. What a comfort in winter if we could drive out and in to the shed without having to stop at our own gate both ways in the cold or wet, and all because somebody's cow may be on the road.

The by-laws of this township provide that animals may be impounded, or the owners complained of and fined. But this involves trouble, and the hostility, and perhaps malevolence, of parties proceeded against; incurring evils not merely for his own ease and safety, but for that of his neighbourhood also. Prosecutions made by officials, whose duties include such action, do not incur the ill-will individual action does; and the inspectors, constables, pound-keepers and path-masters should be amply remunerated out of the fines imposed on conviction. If the pound-keepers were authorized to pay a fee to every one bringing a creature (which I am told is the case in Stamford) the clearing of the road would be largely a boy's business.

The Tree Planting Act, now before the Ontario Legislature, provides for inspectors. Their duties should include the hunting of depredators on the trees, and the impounding of cattle.

In the list of trees given I do not recognize one of our most beautiful natives—the tulip tree. There is a large magnolia in this vicinity, known as the cucumber tree, but it has been dying for some years.

There are a number of unused road allowances that might be thickly planted. About three-quarters of an acre along my south line can never be used as a thoroughfare for carriages. At present it is a nuisance to me and the opposite owner, as a general pasture ground. Without interfering with pedestrians, it might be made a plantation, if men, boys and animals would let it alone. Some such unused allowances are enclosed. The occupants should be required to plant them, or a corresponding area.

Whitewood is on the list, and I had supposed it the tulip tree till seeing a paragraph to the effect that it is proposed to substitute poplar. It surely could not be meant to exclude a tree which Downing declares to be the first of avenue trees, as indeed it is. Its clean, round tall stem, symmetrical branching, peculiarly shaped dark glossy leaves, and its flowers make it a "thing of beauty."

The poplar should be on the list, as its close, compact upright growth, its towering and overtopping height, make it a striking object over level surroundings, and it is so easily raised.

I had thought of writing further as to fences, but have given as much as you may be disposed to utilize.

T. Holmes.

Mr. John Knowlson, of Lindsay, presented a paper, as follows, on

FORESTRY, SORGHUM, GRAPES AND WINE.

On the lines of horticulture and agriculture in this Canada of ours, I am impressed with the idea that there are three subjects worthy the special attention of philanthropists and all well-wishers of our country's progress, financially and socially: Forestry, Sorghum, and Grape Culture. Numerous have been the pleadings in our agricultural and horticultural journals for forest tree planting; yet how little has hitherto been accomplished. However, let us still hope that farmers and others will be aroused to its necessity. No people have more reason than we Canadians to value and admire the "goodliness of trees;" and yet in no country are they more rudely assailed as the enemies of civilization, and objects of extermination, by the ruthless axe and the consuming fire. Such semi-barbarism is discreditable to our national taste, our common sense, and our foresight in other matters of less moment.

Even to confine our view to the environs of our country towns, with very few exceptions, one of the most forbidding and desolate features about them is the mark of this yearly devastation of forest trees, for which there is no necessity. Whereas, if properly ornamented with trees—some standing alone, some in groups—would be exceedingly attractive; and a park, with convenient drives and by-walks for pedestrians, would be likely to draw summer residents, whose money would contribute to the permanent enrichment of its community.

An essential part of the proper treatment of all wood lots is *thinning*. Farmers who cut all the wood from a lot, regardless of size or quality, whether for use or for sale, are managing as ill as can be imagined. They might thin in such a way as to get a large yearly profit, and get more for the remaining wood than for all they now cut off at once.

Although, as I have remarked, so little has been done in the way of planting forest trees, let us hope that, through the continued labours of the Ontario Fruit Growers' Association, and the influence of the public press, that the day is not far distant when forest culture will become popular.

The boundless area of suitable lands in this country, the admirable adaptation of its soil and climate to the growth of magnificent trees, I trust, will lead to the diffusion of capital and labour in this department, and that it may soon become a favourite pursuit. In no other way can farmers so cheaply embellish their farms and add to their attractiveness and value, as by improving their woods, groves and forests, and planting all the choice varieties of native trees on any spare ground not needed for cultivation. So numerous are the varieties of our deciduous trees that we can have but little difficulty in making a selection. There is the elm, the red and white oak, the maple, the black walnut, the ash, the hickory, the black and white birch, the linden (basswood), the butternut, chestnut, larch, etc. And to give greater beauty to these plantations, should be interspersed here and there irregular groups of different varieties, including an occasional evergreen, of which we have many indigenous species: the white and red pine, the spruce, white and red cedar, and what is justly termed the king of evergeens the graceful hemlock.

In the planting of groups it is well first to study the outlines of all the best natural groups to be found, taking careful notice of the way in which the varieties are combined, how near the trees are to each other; how often nature has planted them close together: how often within a few feet of each other; how often at the distance of twenty or thirty feet. Although a group thus imitated may not show much beauty in its incipiency, yet it will become more beautiful and picturesque, more and more like nature every succeeding year, and will give delight to everyone who can appreciate nature herself.

However liberally we may introduce foreign trees let us retain a large number of our own. The many uses to which trees contribute prove their great value: for buildings, for fences, for various agricultural implements, for carriages, for ship and boat building, for furniture, for staves for casks, for fuel, and a thousand other uses for which they are invaluable. Besides, without trees, the world would become a desert; with them

it can be made a paradise. They temper the heat and cold, prevent the injurious dryness of the atmosphere, and greatly promote the fall of genial showers and seasonable rains in spring, summer, and autumn. In almost every county of Ontario it is easy to find lands covered with wood of a second growth, which, within the memory of the present generation, have been cultivated for farm crops, till they were worn out—that is, so drained of those constituents which plants derive from the earth that no other crop could be got from them that would pay the cost of cultivation. These lands, upon being abandoned by man, soon began to grow up in wood; and in ten or twenty years the fields were covered; and in forty a fair yield of wood got from them. The wood again being cut and the land ploughed and cultivated, good crops can again be had from them for some years. Air and water were the principal fertilizers that sustained their growth, but their leaves shed, from year to year, had fertilized the soil very much. It ocurs to me that very few of those who are desirous to plant out forest trees need be put to the necessity of raising them from seed, for in every section of Canada tracts are to be found where young trees of all sizes, suitable for transplanting, are to be had for the labour of digging; and it should be borne in mind that in digging up trees some skill is required. Some have long tap roots that penetrate the ground deeply, while others spread widely near the surface. These different characters require different modes of proceeding: the roots should be taken out of the ground without the slightest bruise or mutilation, if possible, thus the necessity of curtailing the tops would be obviated. The less the roots are exposed to the air between the time they are taken out of the ground and the time they are planted the better. This should never be forgotten. If roots are of any value it can only be when they are sound and fresh. In less than fifty years hence the requiem of the stately pine, the oak, and the elm will have been sung; but their stateliness and their value will be recorded as a thing of the past: do we not already regret the wholesale recklessness which has been employed for their destruction by the grasping hands of avarice.

This scarcity in the older settlements is now felt as a severe loss; but the next generation will in all probability have to deplore their absence as a loss of still greater magnitude.

Plantations of a tree called the *Catalpa speciosa* are now being made on an extensive scale in many parts of the United States. It appears to be a native of the Mississippi valley. It appears to be hardy, and is represented as being a rapid grower and remarkably durable. I procured ten of those three years ago, and planted on a dry, gravelly soil, which I am lead to believe was not the sort best adapted to their growth, although they are said to succeed on all descriptions of soil. The stems were about three-fourths of an inch in diameter and six or seven feet in length. From the fine growth they made and the healthy appearance they showed after two years planted, I was induced last spring to plant one hundred more, which I did upon less than an acre, on soil similar to the first. Every one grew and looked healthy the past fall. I intend planting another hundred or more on the same plot next spring, together with a few of our native forest trees interspersed.

I next beg to offer a few remarks on Sorghum.

It appears that this Chinese sugar cane was introduced into the United States nearly thirty years ago. Some years later the "Imphee," or African sugar cane found its way thither, including several varieties. These varieties being cultivated on the American plan—a number of varieties in the same field—the result has been the production of a number of hybrids, some of which have proved to be much superior to the original sorts for making sugar. Among those is the Early Amber, which matures early, and gives prospect of succeeding further north than has generally been supposed it could be successfully grown; the seed of this variety can be had cheap in many of our seed stores. There is also the Early Orange, a little later than the Amber; and also a variety called the Honduras. Experiments with these and other varieties will no doubt be made to test their comparative values. If any of these varieties can be successfully grown in Minnesota and Wisconsin (and it is said they can in every State of the Union) why not in many parts of Ontario? It is asserted that the time is approaching when

every State in the Union can produce its own sugar. It seems to be very desirable that this business should be fully developed.

I planted a patch of the Amber towards the end of May in each of the two past years, which made satisfactory growth, although the soil on which it was planted was scarcely rich enough for a crop of Indian corn; it made a growth of over nine feet, and matured its seed by the middle of September each year. One of my neighbours grew some, from which he made some nice syrup.

The last crop I shall refer to is the Grape, the culture of which is clearly on the increase amongst us, both as a table fruit, and for the manufacture of wine. That portion of our Province best adapted for its growth, with reference to climatic influences, is on the northern border of Lake Erie, particularly in the county of Essex and on the islands in the lake; yet it is clearly ascertained that in numerous localities throughout the country suitable places have been found where its culture has proved entirely successful. It has also been satisfactorily demonstrated that a really good wholesome wine can be made from it with suitable apparatus in skilful hands. I have myself three acres under vines in a very promising condition, one acre of which (being the portion that has yet fruited), has so far yielded satisfactory returns. I have several varieties, some suited for the table, and more better adapted for wine; and next year, if spared, expect to make preparations for converting the greatest portion into wine, and also for planting more vines. Last fall my bearing vines matured their fruit and wood entirely to my satisfaction, although fully three weeks later than on any previous year. It has occurred to me that if some of our Canadian nurserymen would make the propagation of grape vines a specialty, so as to be able to sell them at reasonable rates, they would not have long to wait for a demand, as there is every prospect of vineyards of more or less extent being henceforth increased in numbers, and I cannot see why the young vines cannot be produced as cheaply here as they are in the United States. Great efforts are being made to produce new and valuable varieties, hoping to generate one or more that would prove equally valuable in all parts of the country. If such a one should be produced, it will prove an immense benefit. But do not propagators ask too much, and have set too great a stint for themselves. Our country affords very dissimilar soils and climate for the vine, and to expect that any *one* variety will thrive equally in all sections is, I think, an unreasonable demand. The grape that would be satisfactory in the western part of Ontario might not be able to contend with the climate of Ottawa, and *vice versa*.

No one grape has ever been the favourite in Europe, where there are a great variety of wines of entirely different qualities, and made from very dissimilar grapes; some of the best wine grapes prove very inferior for the table. About a year ago I hastily penned an article for the *Horticulturist*, describing my small vineyard, and in which I gave my views in regard to the desirability, as I then believed and still believe, of encouraging, not only the production of grapes but also of *wine-making*, claiming that if a pure cheap wine could be brought into common use as a substitute for the many strong alcoholic compounds which are now so freely indulged in, that intoxication would, to a very large extent, die out. Wine, as I then remarked, is the common beverage of the masses in France, and instances of intoxication throughout the country are rare indeed, the city of Paris perhaps an exception, but Paris is not France. Although I hold that the safest course for the extermination of intemperance in the use of spirituous liquors, total abstinence stands first; yet as far as my experience has taught me during the last forty years, I am led to conclude that it will be a long time before a tithe of our population can be found with sufficient moral courage to adopt it, the whisky having a greater charm for them than the sermon pleadings of the moralist; therefore, I advocate as a second plank, to save from the shipwreck of intoxication the larger portion of the community, the substitute of cheap, pure wine of our own producing. Let every legitimate means be resorted to, even if the task seems hopeless, to banish these strong inebriating evil spirits from the land, and if small portions of alcohol shall be considered necessary in a medical point of view, let it be entirely confined to the drug shop, to be dealt out only on the prescription of an honest doctor. For near fifty years men of eminence and men of talent, writers and orators, have been trying to call the attention of the public to

the ruin that was being brought upon the community by the common use of strong drink, but the great bulk of the people are still deaf to their exhortations. Intemperance in the common use of intoxicating beverages has grown into gigantic proportions. Into countless homes it shoots its venom-laden fangs, and annually, nay, daily, it gathers into its deadly coils whole catacombs of victims; its presence is felt throughout the entire land, and everywhere revels in sin and misery. Intemperance in the world is not of recent date, but the frequency and virulency of the evil which alarms so much to-day are traits peculiar to our own times; the causes I will not discuss; it may arise from climatic influences, or perhaps it is the result of feverish life into which social habits and complications throw our various populations. Prevalent as intemperance is, alas! how many fail to observe its vast proportions? Honest, experienced physicians assure us that alcohol, only in exceptional sanitary conditions, brings no positive benefit to the human system, and that a most limited supply suffices for all salutary effects. Notwithstanding this what do facts tell us? Alcohol, ocean-like, floods the land; mild dilutions, as wines, do not satisfy; distillation is called into active service to provide it in more undiminished vigour, and whether it be wine, beer or whisky, the vile art of adulteration is employed to enhance its maddening power. With the immense consumption of alcohol, upon what a terrific volcano of evil and misery society rests. The direct expenditure of hundreds of millions for little beyond mere momentary pleasurable excitement is the least deplorable result. Alcohol taken beyond the limited dose has the effect of incapacitating man for all the duties of life, and leaves him without protection, a prey to his vilest and untamed passions; it directly inflames those passions; it is oil poured upon the burning fire; it fills the mouth with blasphemy and arms the hand for murder. It is the ready foe of purity; it withers all generous impulses of the heart; it turns man into worse than an animal. Thousands of premature graves tell of its ravages. All classes, high and low, offer holocausts upon the altar of intemperance. The brightest minds and the noblest hearts are numbered amongst its victims. Human wrecks, whose fortunes it has dissipated, whose intellects it has stifled, are strewn over the land thick as autumn leaves in the forest. Homes are devastated; hearts of mothers broken; children scattered as waifs through a pitiless world. One week's perusal of a daily paper fills the mind with horror at the recital of the shocking accidents, the suicides, the murders, the ruin of innocence, and the crimes of all kinds caused by intemperance.

I am still persuaded that every effort made in the direction of providing good pure native wine, at a moderate cost, would prove a public boon, and as such, shall continue to hope, will receive a due share of encouragement from all well wishers of the temperance cause. I also hope to see the three branches of industry, the few features of which have touched upon, fully developed.

J. Knowlson.

AN INVITATION.

The Secretary announced that he had received from Mr. John Hoskin, of Toronto, barrister, a member of this Association, an invitation to the gentlemen attending the Convention to meet him socially at his residence on the morrow at two o'clock.

VOTES OF THANKS.

On motion of Mr. Denton, seconded by Mr. Roy, a vote of thanks was passed to the Mayor and Corporation for the loan of the City Hall for the meeting of the Association. On motion of Mr. Dempsey, seconded by Mr. Reeve, a similar vote was passed to the press of Toronto for reports of the Convention; and on motion of Mr. Dempsey, seconded by Mr. Hopkins, it was agreed that the thanks of the Association be tendered to the railway companies for reduced fares.

The Convention then adjourned *sine die*.

SUMMER MEETING.

The Summer Meeting of the Fruit Growers' Association of Ontario was held in the Court House, in St. Catharines, commencing on Wednesday, the 29th day of August.

The PRESIDENT, Mr. Wm. Saunders, of London, took the chair at eleven o'clock, and called upon the Secretary, Mr. Beadle, who read the minutes of the last winter meeting.

MR. BEADLE then announced that arrangements had been made for an excursion of the members to Niagara Falls on Friday, under the conduct of Mr. Morden, of Drummondville, who had volunteered to act as guide. He also invited the members to a fruit banquet, at the Welland House, after the close of the meeting on Thursday night.

NEW VARIETIES OF RASPBERRIES.

The first question for discussion on the programme, "What New Varieties of Raspberries promise well?" was then entered upon.

MR. A. M. SMITH, being requested to open the discussion, said:—I would rather listen to some other gentlemen first. I will merely mention a few of the newer varieties that promise well, taking the Blackcaps first. The Souhegan, a comparatively new variety, did very well with me last year. It is not particularly early, but is a good bearer. The Tyler is another new variety which, though I have not fruited it very extensively, gave a promising record of itself. There is not much difference between these two varieties. The Gregg has now become so well known that it has almost ceased to be entitled to be classed as new. If I were confined to growing only one variety of blackcaps I think I should adhere to the Gregg. The old Mammoth Cluster is almost equally good. In reds, the best new variety I have tested is the Cuthbert, which is also known as the Queen of the Market. That is the only one I have fruited at all extensively this year. Besides some seedlings of my own, I have experimented this year with a seedling of our departed friend and fellow-worker, Charles Arnold, which gives good promise. I also tried what is called the Lost Rubies, and all I have to say of it is that it is a pity it was ever found. The Turner—which, however, is not new—is a hardy variety which will probably succeed over a larger area of Canada than any other. It is rather soft, however, for shipping over any long distance. The Caroline is a comparatively new variety, which appears to be hardy and productive; but its quality is not first-class.

MR. B. GOTT, of Arkona.—I have not had a great deal of experience in raspberries; but I may mention a few new varieties that Mr. Smith has omitted. The Thwack is a redberry that bears good promise. Another is Shaffer's Colossal, a sort of hybrid, which shows an exceedingly productive and vigorous growth. It is, indeed, one of the most successful of the new varieties introduced. The red Hansell, which is a great favourite across the line, is likely, I believe, to prove of great value to us in Canada as well. I join with Mr. Smith in his testimony to the excellent qualities of the Souhegan and the Tyler.

MR. W. H. READ, of Port Dalhousie.—I grow the Mammoth Cluster, the Gregg and the Doolittle, and I must say that I find the Doolittle the most profitable of any. I have a few seedlings of my own, which I am not in a position to say anything definite about at present.

MR. THOMAS BEALL, of Lindsay.—The only new variety I have tried this year is the Cuthbert, which I like very well, with the exception of its colour, which is a dark dull red.

MR. GOTT.—Are you sure you have the Cuthbert?

MR. BEALL.—I think so.

MR. PRESIDENT SAUNDERS.—I was under the impression that the Cuthbert was one of the handsomest berries we have, with a fine bright colour.

Mr. A. M. Smith.—If allowed to stand for some time, its colour becomes rather dark. At the time of picking there is no objection to its colour.

Mr. E. Morden, of Drummondville.—As the growing of raspberries for market is my business, perhaps I should say something on the subject. With regard to the new varieties, I have just this general remark to make—that they are nearly all worthless for our purpose. The very quality the nurserymen are boasting most loudly of in them is of no value at all—that is earliness. The Tyler, the Souhegan and the Hansell are all early enough, if we required them; but we do not. By years of experience in growing raspberries for market, I have learned that while people can buy strawberries for five or six cents a quart, they will not give double the price for early raspberries; and if any fruit growers invest largely in any of these early varieties in the expectation of securing an advantage on the market, they will find themselves greatly mistaken. Raspberries are in far better demand after the strawberries have passed away. With regard to the new varieties, one advantage of the Gregg is that it does not drop easily from the bush, but adheres for several days after becoming ripe, so that you may gather your crop in three pickings. It is a large berry, though rather poor in quality. Some of the older varieties are superior to it in this respect. In the reds, I regard the Cuthbert as very valuable. I wholesaled it a week ago last Monday at 18 cents a basket. The Cuthbert possesses this sterling quality—that, though at any one picking it will not produce a very large crop, yet it will continue to bear picking for weeks after the ordinary red raspberries have gone, and taking the whole season together, it produces an abundant crop. The berry is large, of a rather dark colour, and it bears shipping so well that it may be carried for a long distance without showing any loss of bulk. One fault of many fine varieties of raspberries is their tendency to settle during shipment. This is the case with a new variety I have tried this season, called the Pride of the Hudson; it is so soft that it will settle before it is carried off the field. The Cuthbert, on the other hand, will show no sign of loss of bulk for a day after it is picked.

Mr. A. M. Smith.—I do not agree with Mr. Morden as to the valuelessness of the early varieties of raspberries. I find that they bring me double the price of the later varieties. This year I got fifteen cents a pint for my Highland Hardys before the strawberries were gone.

Mr. Gott.—I would differ from Mr. Morden also on that point. It is too much to wait until the strawberries are gone. We want something to fill up the interval, and that is where the value of the early raspberries comes in. The early Doolittle is very useful on that account.

Mr. Beadle.—I notice Mr. Hoag, of Lockport, N. Y., here. He used to grow raspberries somewhat extensively, and perhaps he would give us his views on this subject.

Mr. C. L. Hoag, of Lockport, N. Y.—I have not had much experience in raspberries for many years. When I did grow them, that old yellow variety, Brinckle's Orange, was a favourite with me. In reds, I grew the Franconia; but I found it to winter-kill so badly that it was not profitable. Still it was the most successful variety I had. My soil was too heavy for profitable raspberry culture. My friend, Mr. Smith, had six or seven acres of them on light sandy soil, where they did better. A friend and myself recently spent some time near Philadelphia, where our attention was called to the Queen of the Market, or, as you call it, the Cuthbert. There it overtopped all others—it grew so thick and strong. The Hansell has also a reputation there.

Mr. E. Ashley Smith, of Lockport.—I have had no experience in the new varieties of raspberries. The Franconia I have dealt in most largely, and with me it was a most valuable berry, although I did find it, as Mr. Hoag states, liable to winter-killing.

Mr. Saunders.—As the discussion is widening, and as we have on the papers other questions relating to raspberries, such as the manures best suited to them, and the cultivation of them, perhaps it would be well to take up the whole subject of raspberries.

Mr. Smith.—My experience was confined almost entirely to the Franconia, and I went out of the growing of raspberries simply because at the time of the financial revulsion on our side I could scarcely find a commission man whom I could trust to make returns for my shipments. The fertilizer I used for the raspberry and found to be of great service was wood ashes, which I used quite liberally. I found mulching to be of

good value in the case of vines liable to winter killing. The ground on which my raspberries grew was rolling, and in those places where the snow drifted and remained all winter my raspberries came through safely, and invariably yielded large crops; but the plants suffered more or less on the high and exposed parts.

Mr. Morden.—Could any gentleman give me any light with regard to an apparent blight that has attacked the red raspberries. The younger plants only come up a few inches when it appears, causing the growth to stop and the leaves to curl in a peculiar manner. I know there is rust on the Blackcaps, but that is another matter. The Brandywines will bear with the blight upon them, but the younger growth will not.

Mr. President Saunders.—Did you examine the leaves to see if there were any lice upon them?

Mr. Morden.—I must confess that I did not examine them very closely. I am, however, familiar with the action of lice on raspberry bushes, and I think that is not the cause. The trouble does not seem to spread, but is local.

Mr. P. C. Dempsey, of Trenton.—We have tried several new varieties of raspberries. Although not many of them have given satisfaction, the Cuthbert has turned out to be one of the best we have. I have no objection to its colour, which some gentlemen have taken exception to. The Gregg with us has been rather tender and liable to freeze. The Cuthbert, although growing side by side with the Gregg, I have not known to freeze. I prefer the Mammoth Cluster to the Gregg. In growing for market, we find that the early varieties pay us best. We send most of our fruit to the Montreal market, where large quantities of wild berries are offered for sale and come into competition with our late berries. It is the worst competition we have. With respect to the local markets, I agree with Mr. Morden that more money is to be made out of the later varieties. I have nothing to offer with regard to the culture of the raspberry. My experience, however, coincides with that of Mr. Hoag, that varieties which are tender on clay soil are perfectly hardy on light sandy soil. It is quite possible that the Gregg, which we grow on clay soil, might be sufficiently hardy on light soil.

Mr. Morden.—I have my doubts whether the Gregg will succeed even on sandy soil. It seems to die out from some other cause.

Mr. Dempsey—With regard to picking, our pickers object to picking the Gregg raspberry, because they cannot get it off the skene before it is ripe. A great many of them turn black before they are ripe; but when they are ripe in reality, they pick quite readily.

Mr. E. Morris, of Fonthill.—I have a few samples of the Hansell (showing them) which I have been very much pleased with so far. It is a fair grower, and I am led to believe that it will be very productive; I think, too, that it will be sufficiently hardy. My experience and observation of the Gregg have been quite different from Mr. Dempsey's. I think it is even hardier than the Cuthbert, for I have seen it stand and thrive in winter close to where the Cuthbert has been winter-killed. The Souhegan is another valuable variety. For early I believe these two kinds are very valuable, and for late, I don't think we have anything to excel the Gregg. There is this to be said, however, that it does not seem to do so well on light as on heavy soil. For quality, size and productiveness the Cuthbert, as a late berry, is hard to beat. I have grown the Lost Rubies. The berry is not quite so good as the Cuthbert, but I think the plant is hardier.

Mr. E. Ashley Smith.—I would like to inquire what is meant by a light soil. Mr. E. B. Lewis, of Lockport, has a field of the Gregg raspberry on what I call a sandy loam. A little distance from that he has another field of what I call a sandy soil. His berries made a very fine showing indeed—no trouble with winter-killing at all.

Mr. President Saunders.—I suppose that what is generally understood by light soil is a light sandy soil with little or no admixture of clay. Sandy loam has more or less of clay mixed with it, and in proportion as the clay predominates the soil becomes stronger. In some sections of Ontario we have whole districts where the soil is so light and sandy that it will almost blow away. The soil approaching that character is, I think, what we generally understand by light soil—containing very little nourishment for vegetable growth.

Mr. Morden.—In the remarks I made before, I tried to speak of the new varieties.

I would now like to say a word or two with regard to some of the older ones. A few years ago, in this place, I remarked that the Philadelphia holds the same relation to raspberries that Wilson's Albany does to strawberries. I am still of that opinion. The Philadelphia has one fault—it is a little dark ; but that is the only fault it has. Most of the varieties mentioned to-day, even the Cuthbert, sprout very freely. The Philadelphia keeps to the hill ; it sprouts very little, and is cultivated almost as easily as a hill of corn. This makes it highly acceptable to that class of people who are in the habit of neglecting their gardens. It yields well. It is not quite so firm as some others, but it is fairly firm. If I were to be confined to two varieties, I should select the Philadelphia and the Cuthbert. Another variety I have tried somewhat extensively, which, I think, will have to pass away, is the Brandywine. It produces a very small, bright berry, that will ship easily from this city to Montreal ; but the quality is so bad that the public will soon discover the fact, and refuse to take it. I think, therefore, that it ought to pass out of cultivation. I have made up my mind next year to dig up my Brandywine plantation and put the Cuthbert in its place.

Mr. A. Wright, of Renfrew.—The main quality we in our district look for in raspberries is hardiness, and without exception the hardiest raspberry I have yet seen is Saunders' No. 70. It is never winter-killed with me, and always bears a large growth. Of course it is not a first-class berry. The Cuthbert with me last winter did not winter kill, because we had a very heavy fall of snow, and of course snow is the best protection we have for plants of any kind. It has consequently given me a good growth of the very finest berries. I have been very unfortunate with my Greggs—I do not know from what cause. They came through the winter very well, but this spring some sort of wire worm ate them up. The Mammoth Cluster has done well enough where protected beside the fences ; but when planted out in the open field it is almost sure to be winter-killed. These are the only varieties we have tried so far.

Mr. Wm. Roy, of Owen Sound.—I fully agree with Mr. Morden with regard to the Philadelphia. It is very easy of cultivation, and is one of the most productive berries for the market that one can grow. I have had experience with the Philadelphia, the Clark, Brinckle's Orange, and the Franconia. The Franconia I found very tender. Brinckle's Orange succeed very well. I have tried some of the new varieties, but without success.

Mr. Morris.—The great objection to the Philadelphia is that it crumbles, besides which it is lacking in quality, and has a bad colour. One of the most profitable of the new varieties I forgot to mention—that is, Shaffer's Colossal. It comes very early and continnes to one of the latest.

Mr. Beadle.—What is its quality ?

Mr. Morris.—It is a little sour ; but for canning and for home use I think it would sell well.

Mr. Beadle.—Have you tried cooking ?

Mr. Morris.—No.

Mr. Beadle.—Well, try that ; it will bring out its good qualities.

Mr. John Croil, of Aultsville.—Is the Philadelphia grown in Mr. Wright's district ?

Mr. Wright.—I believe Mr. Smallfield, of Renfrew, who is here, has it in his garden.

Mr. Smallfield.—I thought I had it, but after this discussion I am doubtful. I bought it from a neighbour as the Philadelphia, and have been growing it as such. It is dark coloured and pretty solid. In former years it has not done well. This year it has done very well.

Mr. President Saunders.—Perhaps climate may have something to do with it. I know that about London the Philadelphia suffers considerably, and perhaps as we go farther north, where there is a greater struggle for existence, we may find that it has ceased to grow very largely.

Mr. A. M. Smith.—I wish to say, with reference to Shaffer's Colossal, that it is not only a colossal bearer, but a colossal grower. I have some bushes this year which I think are nearly six feet high. In quality, the berry much resembles Mr. Saunders' Hybrid.

Mr. Beadle.—The Souhegan, the Tyler, and the Hopkins, three of the blackcaps

that have recently been introduced, are supposed to be valuable on account of their ripening early. I have them growing near each other, and I cannot see any material difference in them as to the time of ripening. Nor have I been able to see any advantage in one over another with respect to quality. They seem very much alike in productiveness, quality, and time of ripening. Perhaps different soils or climate may reveal some superior feature in one variety over another for particular localities. I would suggest that anyone wishing to experiment should try these three kinds, and then decide which of the three is best adapted to his particular locality. I heard the Thwack mentioned today. It is an objection to the Philadelphia that it lacks quality, there is a double objection to the Thwack on the same ground. It is a good bearer ; but for amateur use, or for the market, which can be supplied by some of these other varieties which are finer in quality, I don't think we need grow the Thwack. For my part, I think less of it than of any other variety of raspberries—even less than I do of the Highland Handy. Then the Lost Rubies—Mr. Smith hit the point with respect to them. Any one growing them must grow them where there is plenty of pollen from some of the other varities of raspberries, or he will get no fruit. If we have to do that, I see no reason why the Lost Rubies should not be left lost. Another objection to this variety is that it suckers badly. This year and last year the berries were very poorly formed for the reason, I ascertained, that it had not sufficient pollen. Shaffer's Colossal is growing not far from my new plants of Lost Rubies, and as Mr. Smith has said, it is colossal. If his has attained the height of six feet, I think mine has gone twelve feet. It was about ten feet high the last time I saw it, and I fancy it has grown two feet since. It continues to bear its fruit for a long time, and the berries are the largest cap berries I know of. My impression is that they are too soft to bear shipping any great distance, though I have not tried shipping them. Their maroon colour prevents them from becoming popular in the market. They have a peculiar bloom on them, which will lead any person, not familiar with that kind of fruit, to think they are mouldy. Their flavour is poor, but cooking and the addition of a little sugar will show you a surprising improvement. I intend to grow some of them, and can them for my own winter use. In this form I think they are equal to any. The Hansell fruited a little with me this year. I believe it be closely related to the wild raspberry. It has both the flavour and the look of the wild raspberry. I think it is a hardy variety, but I do not know how far north it will grow. A man who tried it in Manitoba told me it was doing very well there, after having passed through last winter. I have tried the Superb, and I would call it superb in every sense of the word. It is a good bearer, has a good colour, and has a high flavour. I shall be surprised if it does not turn out well.

Mr. Gott.—I was surprised to hear the height of some of the raspberry canes in this district. We look to this garden of Canada to set a good example to all fruit growers. We ought to measure our canes, not by their height, but by their breadth, and we think this effort after a towering height is hardly a good example to set before the people. Several varieties of blackcaps have been mentioned. There are two or three, however, which have yet been omitted—we speak of the Bristol, the Highland Hardy, and the Herstein. We think they are more valuable for market purposes, to satisfy the refined taste of our people, than almost any that have been mentioned. Although they will not tower to the enormous height of ten or twelve feet, they will grow four or five feet, and will bear an enormous growth, and the fruit ripens very regularly. The Bristol, a red berry, I consider a variety of sterling value, being very solid, a fine shipper, and answering our purposes in every respect.

Mr. Morden.—The Herstein and the Highland Hardy I am glad to kick out of my plantation. The former, I believe, succeeds in the neighbourhood of Philadelphia and in some other places. The same may be said of the Highland Hardy. It succeeds locally, not generally.

Mr. Dempsey.—The Herstein and the Highland Hardy have succeeded very well with us. The Herstein looks very nice on the bushes. It is a little soft for shipping long distances, but we have found it enormously productive. I fruited the Hansell this year ; it was planted a year ago. I must confess that I was considerably disappointed in it. I went into a wild patch of raspberries and was able to pick Hansells there as

well as in my garden. I could see no difference between the two, either in time of ripening, in quality, or in appearance. The Philadelphia has given us a great deal of satisfaction—it is enormously productive, attains a good size, and ships very well. On my own ground this year we had a magnificent growth. It is a clay loam, rather heavy, underdrained at a depth of four feet. On a lighter soil, we find that the Philadelphia grows smaller and crumbles sometimes.

At this point the Association adjourned for an hour for dinner.

On resuming, Mr. Gott read the following paper :—

RASPBERRIES.

Gentlemen of the Fruit Growers' Association :

Having been for the past month or more very considerably among the raspberries, one of our most beautiful and savory summer fruits, you will not wonder that I feel myself to be pretty thoroughly saturated with their odorous flavours. We have felt that in the timely and properly gathering and successfully marketing a crop of raspberries, even on a small scale, there is much of care and skilled labour to be expended. But in the experience of this season we are happy to say that the readiness, and apparent pleasure with which the fruit was invariably received in the market, not only give us the deepest satisfaction in our work as fruit growers, but made us also to feel that we were amply rewarded for all our toil and care in its culture. Have we not now reached the period when the honest cultivator of good fruit will most assuredly be well rewarded in every department of his industry? In hastily discussing upon raspberries for a short space at the present, we do not do so because we feel that we can add anything to the brilliant array of writers, and the large amount of most excellent matter on the subject that has already appeared in our publications, but rather simply to add my humble testimony as a practical man to the excellences of our

POPULAR CANADIAN FRUIT.

In taking this position, I do not do so to assert, or even insinuate, that it is an exclusively Canadian fruit, but that it is as popular and acceptable in Canada as in any other country under the sun. We are pleased with its wide and extended production, but we are much more pleased with its Canadian production, because it fills the bill here in a way that nothing else can. Again, in taking this position we have not the slighest wish or intention in doing so to throw over at one full sweep the whole list of luscious strawberries that have just preceded us. No, by no means! We maintain that we must have the strawberries, and in all their richness, variety and productiveness, placed upon the market for as many consecutive weeks as possible. But with respect to the raspberry, we hold and teach that it is filling a great popular want in its season that nothing else can supply, and a want that must be supplied, situated as we are with regard to country and climate. It is essentially the people's fruit, and it is our duty and our business to produce it in all its wealth of variety from as early in the season to as late as we possible can, and to fill the season with it in all its fulness and plentiousness. It is not merely the rich man's fruit, although during the season just past it looked something very like it, by its scarcity and price, but it is as well the poor man's fruit, any man's fruit, and the poor but lovely child of the peasant will relish it with equal keenness and pleasure to that of the pampered heir of the mansion. Oh, how many times have we seen the eye of the bright little boy or girl as it was sent on an errand by its mother for a box of raspberries, glisten with the most intense delight as it took the rich treasure of fruit in its hands and scampered away. Surely we cannot but feel that we are doing essentially a *good work* for the growing population of our country in trying to supply them with the health and pleasure-giving fruits of the season in their purity and abundance.

THE INCREASING DEMANDS.

On account of the general scarcity of fruit this season, the demand for our cultivated and beautiful raspberries was exceedingly large and keen, so much so indeed, that the the crop was by no means sufficient to supply it, though far greater than we had ever before known it. Again for obvious reasons, the general cry against the cultivation of the raspberry, viz., the cheapness and abundance of the wild crop, was scarcely felt this season to injure our sale, and every year this outcry and objection will be felt less and less, until it will eventually cease altogether. The land is annually becoming too valuable for other purposes, to allow it to be in neglect or covered over with logs, brush, and briars, simply for the few raspberries it may produce, and the owner gets a very small share of these for himself. Those places where we used always to go for our supply of raspberries (and many a hard fall and bad scratch we got into the bargain), are now, by the careful industry of our people, almost entirely disappearing from the fair face of our country landscape. If, therefore, the people want raspberries, (and they do) from this time forward they must depend upon their own individual efforts, or those of the professional fruit grower for their supply. What is to be done? Shall we neglect our duty and let them languish for the want of a luxury that it was no doubt designed they should have, and have in the greatest abundance for themselves and their families? Those of us who were acquainted with this country in its virginity know, that as soon as the splendid growth of noble forest trees was removed, the whole country was immediately covered with cane,

LIKE A NATURAL RASPBERRY PATCH.

Who can doubt, as Dr. Wilde would say, that there was a design in this? Does not our heated and intense climate cause the relish for these cooling and refreshing fruits? And under these circumstances ought we not most assuredly to have them for our health and refreshment? Might it not be readily argued from this position, that Providence, foreseeing that this condition in our circumstances would exist, and so produce these demands for these fruits, caused in His infinite wisdom this natural product to appear just where it would be most useful and would be most needed? I leave these enquiries for your serious consideration, my brethren. The questions of importance now with us as professional men are, how shall we best supply the increasing demand for raspberries? And why are not our markets better supplied with them? These are queries that concern us as an association of fruit growers, and we should earnestly apply ourselves to their solution. If raspberries have been scarce in our markets, so they have ruled high in price the past season. In our parts of this fair Ontario these fruits have sold at wholesale for $4.50 per crate of three dozen boxes, and the retail price to the consumer, as high as eighteen to twenty-five cents per box. I take it and am bold to affirm, that this is a great crying shame on us as a people in a country like this. Under no circumstances, for every day use, should this fruit average more than ten or twelve cents per box to the consumer. To have the fruit plentifully supplied to the tables of our people, these high prices must be reduced, and the fruit must be more generally cultivated amongst us. Shall we be less industrious and careful of our privilege than our neighbours across the lines, who are ever foremost to supply themselves with the delicacies of the season? Shall we not by honest efforts seek to supply our markets with any needful delicacies, or shall we compel our people to seek their supply from others. We will leave these enquiries, and for a moment consider the raspberry in its

EASE OF CULTURE AND PRODUCTIVENESS.

As to the soil we find that any of our good productive wheat lands are just the thing for the successful production of fine raspberries, fit to grace the table of a prince. So long as the soil is high, warm and dry, it matters but little whether it be sandy loam or clay loam, but we would prefer a soil that is mild and not extreme in either of these. They may be planted in the spring and in rows in any direction; but preference is given to north and south, and worked by horse-power and hoes from year to year. A planta-

tion well located and well attended to is supposed to continue in good bearing condition for eight or ten years, but it is better to put out a new plantation every five or six years, for the second and third crops are the best. The products will be most satisfying to the careful cultivator, and will range from 2,000 to 3,000 quarts per acre, according to the circumstances of soil, location, variety and attention. The outlay for labour and gathering does not amount to much on the whole crop, and for ordinary family use does not amount to anything, as it is incidentally done, and the abundant rewards richly repay for all care and labour bestowed upon them. I will attempt to give you a more definite idea of my meaning by a notice of this season's work in

OUR PATCH.

This we do, not merely in a spirit of self righteous boasting, or to hold ourselves up to be wondered at, for we believe that many cultivators have been enabled to do as well, or even much better than we have done. But example is the best kind of teaching, and practical experience in these matters, as well as many others, is most to be relied upon. It is better than fine spun theories, and is frequently very hard to successfully confute.

Our raspberries are located on a rich piece of clay loam, gently sloping to the north and fringed on the south side by a piece of forest, or woods, if you prefer it. This position we liked very much and thought it the most desirable for successful culture and for the following reasons:—First. The position sloping to the north and having a good shading from the belt of woods, would be most effectually screened from the intense summer sun, which is invarably the great cause of much damage to the fruit when it is ripening, or just before, by being scorched and utterly dried up. Secondly. This location so situated, was pretty well supplied with moisture in summer, but not wet, a consideration which we know would be invaluable for the crop, to secure it against the intensely drying influence of our July and August months. In these particulars we hit it right on the mark and our crop of raspberries was this year one of the prettiest sights of the kind that ever greeted the sight of an expectant cultivator. We suffered from no adverse influence with the slight exception of one. The forepart of the season was very wet and showery, just at the time of the opening of the blossoms. The wet from the passing showers lodged in the tender expanding blossoms, and the sunshine coming hot upon it just afterwards, had the effect of scalding the blossoms and killing them, and we lost a third or more of our crop from this cause. But still the result in the end was grand. The patch contains 37,440 square feet of surface or seven-eighths of an acre, and has 2,080 plants upon it, planted six by three feet, which are cultivated by horse power and hoe. We keep down all side shoots and suckers, and prune back the young canes to three feet. We commenced picking for market this year July 18th, and continued on every other day or so until Aug. 21st, or a little over a month. During the time we picked 1,520 quart boxes of fruit, and as they sold at wholesale for twelve cents per box, realized us $182.40 in cash or nearly nine cents per plant on the average, although some of them must have nearly doubled this result. This we thought a very good showing for the second crop off the plantation. The varieties we had in cultivation were for blacks: Davidson's Thornless, Seneca, Gregg, Mammoth Cluster and Doolittle. For reds: Naomi, Highland Hardy, Brandywine, Turner, Bristol, Herstine, Belle de Fontany, Clarke, Philadelphia, Cuthbert and Niagara. For yellow: Arnold's Orange King. These were a dozen very interesting varieties, and I can assure you, gentlemen, they were a most interesting lesson for study for any and all who had a taste for these fruits in their finest forms.

NOTICE OF VARIETIES.

Among the blacks the Davidson is the earliest and the Doolittle and Seneca immediately following. These are profitable fruits when well grown on suitable soil and location, but if otherwise they are almost worthless. For a general crop for the market we have nothing on the list that will surpass the Mammoth Cluster, either in plenty or in beauty of fruit. It too has good internal qualities, is a good shipper, and is on the whole a boon to the lover of good fruit. The Gregg is recognized the best for a late crop, and the best

of its class. One of the salient points in the Blacks that makes them a great favourite with the fruit growers, is their admirable shipping qualities. They are so solid and compact in their composition that they can be shipped to almost any distance in perfect safety. Again, they are very popular, and almost everybody wants them, excepting merely the newly arrived Englishman, who will persist that they are "*hold brambles.*" For all culinary purposes they never come amiss, and for preserving, either by themselves or mixed in equal parts with the Reds, they are very good and exactly fill the bill. These fine fruits have a fair future before them in this country. Amongst the Reds the Highland Hardy, Brandywine and Bristol are the earliest on the list, followed closely by Herstine, Turner and Naomi. These are again followed by Clarke and Philadelphia and lastly by Niagara and Cuthbert. Philadelphia is the most wonderfully prolific bearer on the list, and will fill more quart boxes than almost double the quantity of bushes of any others. Its great fault is, it overbears, and either the berries are small or they crumble. Some objections have been made to its colour and its quality, but we ignore these in our market and are much pleased with it. Naomi is a remarkable berry and is the best shipper we have in the Reds. The berries and grains are large and a fine colour, and very solid, but it also is apt to crumble. It is hardy and very prolific. Belle de Fontenay is an ever-bearer, and will continue to ripen its large and beautiful fruit right up to frost. We make good use of this variety for the fall shows. Turner and Herstine are the great favourites with all raspberry growers, both east and west, and for a main crop, near a good market, they certainly are admirable. Turner is very prolific and is a great favourite with the pickers as it is thornless. Cuthbert is the best late berry that has yet come to hand, and is the most promising variety on the list, and for fine beautiful fruit it is hard to beat. It is also a very solid berry and will ship to distant points in a very satisfactory manner. So far as tried it has no faults. Niagara too, is very promising, and for beauty of berry and a high genuine raspberry flavour, it is one of the best on the list. This variety may be safely planted to any extent.

From this list of fine sorts of raspberries, any fruit lover in the land may find abundant satisfaction, and a rich reward for care bestowed upon them. But lest any should fail, there are many

NEW VARIETIES

temptingly offered to the fastidious, who find it hard to be suited. Among these are the Souhegan and Taylor, both blacks, and said by their respective advocates to be both near perfection. What little acquaintance we have had with them, they certainly are very good, and the first is the best, and earliest variety offered. Shaffer's Colossal is a new purple variety, and is promising, indeed we think it better than the old Ganargua so favourably known. Thwack and Hausel are both reds, and are very fine and very good. To these, others are being continually added. We stop. Who can approximate the future history of the raspberry in this country ?

Mr. Roy.—I omitted to mention this morning that my soil is a clay loam, and that the manures I use are barnyard manure and ashes.

Mr. Morden.—I think we shall all agree with Mr. Roy on the subject of manures. I doubt if any gentleman has found anything better than the two he has mentioned. In soils like my own, which contain a large admixture of potash, I fancy that ashes will not do ; but stable manure is useful anywhere. It requires to be well rotted, however ; if it contains much grass seed, you are likely to have a sod, and that is bad for raspberries. I desire now to make a few criticisms on my friend's essay. His view is that raspberries ought to be placed before the consumer at ten or twelve cents. I think that is nearly impossible. It is desirable that the consumer should get his fruit at as low a price as possible ; but if we keep on lowering much further, we shall soon reach a point that will drive every man out of production. It is impossible to produce raspberries at the price of strawberries. It takes two years to get your plantation established, and you require

to renew it in six or eight years. It demands pruning, and constant attention and cultivation. It costs two cents a basket to get raspberries picked, and it is simply impossible to place them before the consumer at a very low rate without crushing the producer. I have had some experience with the Turner, and I have turned it under. It is a very good berry for the colder parts of the country, and is good in quality, but the berries are very small. They are inclined to grow singly, and to get under the leaves, so that it is a matter of difficulty to find them. This is a difficulty with all raspberries except the Philadelphia and the Cuthbert. With regard to cultivation, of course the blackcaps remain in the hill, while the reds tend to form a hedge. I have tried the hedge plan, and have given it up. I am now proposing to cross-cultivate all my raspberries. I plant them from five to six feet apart in one direction, and four feet one inch in the other. These distances are convenient, because they measure my field out in rods. I run the cultivator each way—one of Cox's iron cultivators, which I would advise you all to get. It is necessary to do this several times a year in order to remove suckers. One word with regard to the profit of raspberry culture. I believe the culture of the raspberry will always be profitable if the soil and the man are both suitable. There is only one man in twenty that ought to grow raspberries that will succeed. Any man who has any ambition to grow weeds had better leave raspberries alone. If you neglect them long enough to allow the weeds to take possession, you are done for. In my particular neighbourhood, where five years ago there were five men growing raspberries, only one is growing them to-day. But the one successful man out of twenty will continue to grow them. He will cultivate faithfully throughout the entire season, and by doing so will reap a fair profit. Raspberries will not do with poor cultivation.

Mr. Roy.—How often do you prune them?

Mr. Morden.—Twice in the season, and perhaps once in the spring. I do not allow them to grow more than four feet high. Very likely it would be a good practice to trim out the old wood. In practice, we find we can trim out three times as much in the fall, or on a warm day in winter. Sometimes I trim the bushes immediately after the bearing season is over; but generally we find it more economical to do it after the leaves have fallen.

Mr. Read.—Some remarks have been made about the old Philadelphia. Those people who have a preference for a wild berry ought to be pleased with it, because it is a wild berry. It was found in the State of Pennsylvania growing wild. That accounts for its hardiness. If I wanted a variety for propagation, I would use the Philadelphia for the female. In fruits especially, the female stamps its character more strongly on the offspring than the male. My impression is that the old Philadelphia, rightly cultivated, will do well both in strong and light soil, though my experience is that the best soil for fruits of all kinds is one between the two—clay and sand—a sandy loam. I have crossed the Philadelphia with one of my own large reds.

Mr. W. W. Hilborn, of Arkona.—We have grown over a dozen varieties of red raspberries, and next to the Cuthbert, the Turner has been the most profitable with us on a clay soil.

Mr. Chas. Drury, M.P.P., of Crown Hill.—The raspberry is very rarely to be found in our part of the country, and I am sorry to say I have no report to make on the subject.

Mr. President Saunders.—Before we pass to the next subject, perhaps I may be allowed to say a word or two on the raspberry question. Mention has been made of the hardiness and productiveness of some seedlings that I raised some years ago. I may state that this year I fruited some seedlings from those seedlings which have been raised by Mr. Bucke, of Ottawa. While some are very like their parents, others have gone back to the blackcaps, and in some instances back to the old varieties, showing that these hybrids do not give to their progeny their characteristics, but are likely to revert back to their original forms—a very interesting point in our knowledge on this subject.

HARDY SHRUBS.

The next subject, "The Best Varieties of Hardy Shrubs suited to the Climate of Ontario," was then taken up.

Mr. Morden.—I would suggest, in order to save time, that a ballot be taken on this subject, each gentleman marking down the names of six varieties, and that we go on to discuss something else.

Mr. President Saunders.—Our friend, Mr. Morden, does not appear to have much sympathy with hardy shrubs, but perhaps there may be some lovers of hardy shrubs who would like to say something about them, and we do not want to cut the discussion short.

Mr. Gott.—In dealing with hardy shrubs, we deal with a very large class of plants. They are divided for convenience into four classes: (1) deciduous shrubs, (2) variegated shrubs, (3) evergreen shrubs, and (4) climbing or trailing shrubs. The first division embraces a large number of very useful shrubs, more or less extended throughout Canada. Some of the best among them are *Berberis Canadensis* and *purpurea*, which are perfectly hardy; *Calycanthus Floridus*, a sweet-scented shrub; *Cornus sanguinea*, or red dogwood; *Cydonia Japonica*, a very beautiful shrub, well known in the country; *Deutzia crenata* and *Deutzia gracilis*, very beautiful, and among the best; *Weigela rosea* and *Weigela hortensis*, a handsome and early pair of shrubs; *Hibiscus*, or rose of Sharon, if taken in-doors and protected during the winter, will give ample satisfaction; *Hydrangea paniculata grandiflora; Lonicera*, or honeysuckle, many varieties, especially Tartarian; *Syringa*, or Lilac, every man's shrub, also numerous varieties; *Pyrus Japonica* and *Spiræa*, very pretty, and in almost endless variety. Among varieties of the second class may be mentioned *Cornus variegata*, *Weigela rosea nana* and *Sambucus variegata*, or Golden Elder. The evergreens include Box, an English plant that does very well in this country, and needs but little protection; *Crataegus*, or evergreen thorn, a very pretty shrub; and *Mahonia*, or American Ashberry, a well known bright-leaved evergreen that needs very little protection. In the fourth class—the climbers and trailers—is the *Ampelopsis quinquefolia*, the best house-climber in existence. It climbs up the sides of our dwellings, and makes a show of delight. The *Clematis* are found in great variety, all of them very beautiful, especially Jackman's. I may also mention the *Hedera*, or Ivy, the *Lonicera*, or honeysuckle, and the *Wistaria*, all of which are found in great variety. All the shrubs I have mentioned are more or less beautiful, and will amply repay any labour bestowed upon them. Shrubs are becoming more and more popular in our country as it grows older, and the people are growing in taste and intelligence.

Mr. Beadle.—I believe a good many of us are interested in this subject of shrubs. I believe we want our homes to look pleasant and bright, and nothing we can plant will contribute so much to that end as some of these flowering shrubs. We plant shade trees, but it takes a considerable time for them to develop their proportions. In the meantime we can surround our homes with flowering shrubs which will add very much to their attractiveness and charm, and, when the practice becomes general, to the beauty of our towns and cities. Visitors from abroad are thus pleased and attracted, and may often be induced to take up their permanent residence in a place so adorned. At all events, the decorating of our lawns and gardens with these beautiful shrubs will acquire for us the reputation of a tidy and tasteful people, with pleasant homes and surroundings. In telling what we know about these shrubs, our experience will doubtless be varied. I find we have gentlemen here from Goderich, Owen Sound, Trenton, Prince Edward County, Aultsville, Renfrew—from nearly every section in the Province; and perhaps some of the shrubs I name as hardy, from my experience here, will not be found to be hardy in some of these other places. The first variety I name is the Japan Quince, which I have found to be quite hardy. It is one of the first to blossom in the spring. Even before the leaves are out it begins to put on its scarlet flowers. I have seen an ornamental hedge of it, which, when in blossom, was a very beautiful sight I can assure you. It was a perfect blaze of brightness that reflected back the sunlight from its scarlet petals. And after the flowers have gone, its leaves of bright glossy green give it even then a very pretty aspect. I know the plant is a little angular, but it does not require much atten-

tion to keep it from straggling. Next to that I will name the Plum-Leaved Spiræa. The family to which this belongs is very numerous; but I have found this variety, on the whole, the most satisfactory of some dozen Spiræas that I have tried. The flowers are double, in the form of a little rosette of white, and they are produced in such profusion that they cover the branches entirely out of sight. The green leaves are just on their way when the flowers appear, and as they peep through the white blossoms, they produce a very pretty contrast. I would recommend our friends, even as far north as Renfrew, to try this plant. The *Prunus triloba* may also be mentioned. Next I would name the *Weigela*, of which there are a great many varieties. The *amabilis* and *nivea* are both beautiful; but the *rosea*, the oldest of all, I have found most satisfactory. I have sought in vain for the wonderful beauty of colouring in the newer varieties, which is set forth frequently in the advertisements of them, and I have fallen back on the old *rosea*. The Variegated-Leaved variety is also very pretty. The leaves are green, with a creamy white variegation, and the flowers are lighter than those of the *rosea*, which are decidedly rose-coloured. This variety also blossoms very profusely, but not quite so early as the others I have named. With regard to the *Deutzia*, I have not found it perfectly hardy here. It does sometimes kill back, but if you cut off the dead wood, it will grow and blossom very well. In the *Deutzia crenata* the flowers are double, the interior row of petals being white, and the outside row pink, sometimes rose-coloured. These little bell-shaped flowers hang down from the stems in great profusion. Any who have not yet tried it will, I think, find it a charming shrub. Another little *Deutzia*, the *gracilis*, will, I think, grow in Renfrew, or at Owen Sound. I believe I have seen some of them in Mr. Roy's grounds, at the latter place. Then, I recollect that you have plenty of snow up there, and wherever snow falls as a blanket covering, these plants will doubtless sleep safely all winter, and come out full of life in the spring. The *Deutzia gracilis* has a graceful, feathery style of growth, and the branches, in the blossoming season, are loaded with delicate little white flowers. Those who want to try forcing shrubs under glass cannot do better than try this *Deutzia gracilis*. Take up a plant in the autumn, put it in a pot, and set it away where it will be cool. Do not give it too much heat until you want it to flower, and even then, bring the heat on very gradually. Another of these early flowering shrubs mentioned is the Japanese Plum, the value of which I would like to emphasize. The flowers are very much like peach blossoms in colour, and they grow so profusely as to hide the branches, and to clothe the little shrub in a mass of bloom from top to bottom. I have found it to be perfectly hardy here, never having known it to suffer at all. How it will thrive farther north I do not know, but I fancy from its appearance that it will do very well where there is snow to protect it in winter. Another of the newer shrubs pleases me so well that I will mention it. It is a variety of snowball, known as the *Viburnum plicatum*. Upon this, the snowballs grow differently from what they do on our ordinary snowballs. They are hardly as large, and they form near the leaves. Where the leaf comes out a little sprig comes out with it, on which the flowers form. The colour of the snowball is white, but a different white from that of our common snowball. There is a peculiar whiteness about it, almost snowy, that makes it very attractive, and when the plant is in full bloom, it is a very showy object on the lawn. A late flowering shrub is the *Hydrangea paniculata grandiflora*. Many of you, no doubt, have it. It blossoms late, and when planted in good soil, will grow quite luxuriantly, to the height of six or eight feet, and produce large panicles of flowers, which change their colour, coming out first green, changing to white as the autumn comes on, and then to a rosy colour with the approach of winter. The flowers last a long time, and, although they have no scent, yet, as this shrub is in full bloom when other shrubs are past their bloom, it is a very attractive object. Another shrub that I would mention as desirable on account of its bright foliage, in addition to the Purple Berberry, is the Purple Hazel. The Fern-leaf Sumach should also be mentioned. It resembles our ordinary sumach, with the exception that the leaf is cut like the leaf of a fern. Persons sometimes stop to admire it, and ask what it is. It has, however, the bad character of our common sumach—if you disturb the roots at all by cultivation, break them or wound them, they will be sure to send up sprouts; but if you plant grass about it and do not disturb the ground, I don't think you will ever be troubled with sprouts. Among the

climbing shrubs which I admire most is the Clematis,—which I now speak of as a type. There are a great many varieties of it, some with white and some with purple flowers, and various others embracing all the intermediate shades—very large and conspicuous flowers, sometimes as large as a tea saucer, which will keep on appearing through the whole season. I think the most desirable kind to plant is that which will bloom from the first season's growth. The varieties of clematis may be divided into two classes—those that flower from this season's growth, and those that flower from last season's growth. If a plant that flowers from last season's wood is injured in the winter, you will get no flowers from it; but if you cut down one of the first mentioned class to the ground, it will come up again and flower all the summer long, beginning about the first of July, and continuing until the frost comes. The *Wistaria* is another shrub that I admire very much. There is a double flowering variety which, however, I have not myself tested. But even the single flowering variety is very pretty indeed. It blossoms about June, with long, pea-shaped, purple flowers, hanging in clusters, and looking not unlike bunches of grapes. There is also a white variety, but I like the other better. I have not known it to suffer from the winter. Occasionally a little growth of five or six inches will kill back; but ordinarily it stands our winters well, and makes a very beautiful climbing plant if you want to train it on lattice work or on a screen anywhere. I think I have now said enough, and I hope some other gentlemen will give us their experience of these plants. For, practically, this Society is not to confine itself to fruits. Our object is to beautify our homes and make our country everywhere more attractive, not only by the cultivation of fruits and shrubs, but of forest trees and shade trees as well.

Mr. Morris.—Mr. Gott has given us a very comprehensive list of shrubs, but most of them I have found too tender. I would particularly mention the *Calycanthus Floridus*, and the *Deutzias*. The same objection applies to two or three varieties mentioned by the Secretary, especially the *Prunus triloba* and the Variegated Weigela. An objection to the *Viburnum plicatum* is that it is very difficult to make it grow. It will not do well except in the hands of an experienced gardener. Among the best and hardiest shrubs of my choice, I would name first the *Spiræa van Houtte*, which looks well either singly on the lawn or in hedges. I think it flowers early in June, and then it is a perfect mass of white. Another Spiræa that is valuable on account of its peculiar foliage is the *aurea*, the leaves of which are quite a golden colour. I agree with the Secretary in regard to the *Purple-leaved Filbert*. It is a very pretty shrub. The *Weigela rosea* I consider too slow in growth to be suitable to this country. The Weigelas I prefer are the *candida*, the *Desboisii* and the *Steltznerii*. An excellent shrub which has not yet been spoken of is the Tartarian Honeysuckle.

Mr. Gott.—I wonder what sort of a country my friend comes from that he finds the Weigela Variegated tender. It must be a very exposed locality. With regard to the *Weigela* being a slow grower, it seems to me it is the reverse.

Mr. President Saunders.—Mr. Morris speaks of the Calycanthus as tender. I have seen it growing about London, and there it gives a different account of itself. The *Cornus mascula*, or variegated Cornus, was mentioned by Mr. Gott, and I would like to add a word in its favour, as I consider it a very beautiful shrub. There is another, known as the *Red-stemmed* Cornus. This particular species is used with great effect in some of the public parks of the United States. It is usually planted in masses, the red stems giving a very pretty effect with the whiter Cornus as a background. Another shrub not referred to, which I have found quite hardy, is the Snowdrop tree of the south (*Halesia tetraptera*). It flowered very beautifully on my place last year, when the Weigelas and the Deutzias were cut down; but, though it appears hardy enough, my experience is that it does not always flower satisfactorily. The Deutzias in the neighbourhood of London nearly always kill back, except the *gracilis*, which is a low shrub, and generally survives and yields some flowers. With regard to the *Viburnum plicatum*, I have experienced the difficulty Mr. Morris speaks of—that it is difficult to grow; but it is beautiful in foliage and blossom, when you once get it. There is another Viburnum, however, which I got from France, under the name of *lantanoides*. Its foliage is similar to that of the plicatum, and is very showy, both after blossoming and when its fruit is ready. The *Eleagnus argentea* is among the hardiest shrubs. Our friend, the Secretary,

botanizing in the neighbourhood of Winnipeg, found some specimens of this shrub growing there; and I know it grows even north of that point. It derives its name from the fact that its leaves are silver-coloured on the under side. A shrub that should not be overlooked is the *Potentilla fruticosa*. It begins to blossom with yellow flowers moderately early in the season, and the flowers last a number of weeks. It is common about our lake shores, and it forms a very beautiful feature of the bouquet at that season. The Double Thorns have not been mentioned. The Double Scarlet and Double White are very attractive, and should not be forgotten. Another hardy shrub is known as the Fringe Tree (*Chionanthus virginicus*). It produces clusters of fringe-like white flowers and the foliage is very attractive—very much like a laurel. Mr. Morris has spoken of the *Spiræa van Houtte*; it is a perfect mass of bloom for some weeks when in season. The Japan Quince almost always kills out in the neighbourhood of London.

Mr. Roy.—I would just repeat the names of a few varieties that I have found sufficiently hardy on my own place, Royston Park, Owen Sound: and I think every man who has a small piece of ground, even if it is not more than half-an-acre, ought to lay it out in shrubs. I will mention the *Weigela rosea*, which thrives very well with me. The *Deutzia scabra* is a beautiful shrub, with beautiful white flowers, like orange blossoms, that come every year in June, and continue for a long time. The *Deutzia gracilis* I find quite hardy; as we have the advantage of so much snow, it always comes out in the spring fresh and full of blossoms. The Crenata is also quite hardy in my neighbourhood. As to the Tartarian Honeysuckle, it is one of the most beautiful plants you can have about a lawn. The Forsythia viridisima is very hardy, with rich green bushes and bright yellow flowers. I have a large variety of Spiræas—Ulmifolia, Revesii, Douglasi, Bella, Prunifolia, Salicifolia, Corymbosa, and Callosa. In Syringas, I have the Sweet-scented and the Philadelphus. The *Sidonia Japonica*, or Japan Quince, thrives with me in all its luxuriousness. The Mahonia, or American Holly, is somewhat tender; but the snow protects it, so that it always comes out well in the spring. It suffers more from wind in the early spring than from cold. I have also the Berberry, the purple-leaved, and the green, the former being a very showy plant; the Gordon currant; the Hoary-leaved Fringe Tree, and the White Fringe Tree; the High Bush Cranberry; the Kerria Japonica; the Snowberry; the Dogwood; the Leatherwood, a shrub that is not often found; the Hydrangea paniculata; the Snowball; the Haleana Honeysuckle, and the Trumpet Honeysuckle, which are always sweet and fragrant; the Althea; the Prunus triloba; the Ground Cherry; the Hypericum Calmianum; the Rhus Cotinus, or purple Fringe Tree; and the Sweet-scented Thorn—the Scarlet and the Double White. These are all hardy, and are very beautiful.

Mr. Morden.—I would like to throw out one or two suggestions in regard to shrubs. One is to be very cautious about planting shrubs. It has been the habit of some people to plant them in grave-yards, where they have done a great deal of harm. Another suggestion is to plant the shrubs in groups about the lawn. In that way they will be much more easily taken care of. I have a very beautiful hedge of the Tartarian Honeysuckle. With regard to hardiness, many of those mentioned are not hardy. They have survived in some cases simply because they were sheltered. The most of them, if put to the test of a cold, bleak wind, will go under. A number did so with me last winter.

Mr. Gott.—I would like to ask whether some of these shrubs mentioned, even though somewhat delicate, might not be properly cultivated by us. There is the Rose of Sharon (*Hibiscus*), for example, which can be grown successfully with a little care. The Mahonia is a very proper thing, and will certainly repay any labour put upon it. One of the most beautiful of our shrubs, not yet mentioned, is the rose.

Mr. Wright.—As yet, I have not been able to find many shrubs that will do remarkably well in my neighbourhood. The Hydrangea has not succeeded—not because of the cold blasts of winter, for it died a natural death. In most cases we have had to resort to our native forests and get trees and shrubs from there. For example, I may mention the Moose Wood, which carries a mass of beautiful green foliage, and is a very attractive shrub. None of the varieties mentioned have I known to succeed.

Mr. Smallfield.—I have not succeeded with the Hydrangea. It has not lived through the winter. The Syringa and the Spiræa also winter kill. The Berberry I am

going to try again. Lilacs succeed always. I got some Viburnum seeds from the old country, and tried the experiment of raising them, but they would not live. The Acacia, I think, thrives in a neighbouring garden. The Snowball also thrives.

Mr. President Saunders.—Have you tried the purple Berberry?

Mr. Smallfield.—I don't think it was the purple. Nor do I think it was winter killed. However, I am going to try it again.

Mr. Beall.—With regard to the new shrub spoken of by two or three gentlemen, the Spiræa Van Houtte, a year or two ago I planted it in the most exposed spot on my ground, and, although I gave it no shelter during the winter, this spring it came out and blossomed beautifully, and it is the most satisfactory Spiræa I have seen. In a recent report on hardy shrubs, Mr. Gibb recommends very highly the Caragana, or Siberian Pea Tree. I believe it is perfectly hardy. It is a very pretty thing for a few weeks in spring, but during the hot weather the foliage becomes so much injured as to render the shrub unsightly and valueless. I could not recommend it. The Purple leaved Berberry, when in bloom, is a most beautiful mass of colour, but I would be satisfied with very few specimens of it. The Daphne Mezereon is a pretty little shrub, and perfectly hardy; but I would recommend great caution in using it, as it produces an abundance of red berries which, although very beautiful, are extremely poisonous. The Prunus triloba is one of our best hardy shrubs, which I should like to see used more generally than it is; but it requires to be carefully watched, as the stock on which it is grown is constantly throwing up suckers, and to such an extent that, if allowed to grow one season, they will generally kill the graft. I often wonder that the Moose Wood is not more cultivated than it is. I have a number of this shrub in my place, and I like them very much. Perhaps they are too easily obtained; I do not know any other reason why they are not more generally adopted. The Mahonia, sometimes called the American Holly, is a shrub well worthy of a place in any person's garden, if it can have plenty of room. I have one eight or ten years of age; yet it does not grow more than about a foot high; but it spreads very much. It appears to be quite hardy with me. I have in some cases thrown wheat straw over it. In the spring its leaves are not perfectly green, but have a beautiful reddish tinge. The Weigelas and the Deutzias are not very successful with us. They kill down close to the ground. The Purple Hazel, which has been referred to, we also find it difficult to preserve. I have managed to keep it alive, but it is killed down to the ground every winter. This is my experience of shrubs in the neighbourhood of Lindsay. I thought it better to have the objections go out with the recommendations, so that people would be better able to judge for themselves what varieties they should purchase.

Mr. Dempsey.—About Trenton we have cultivated very few shrubs, and what we have cultivated we have taken very little care of. Several of the varieties spoken of have failed with us, being too tender. The Japan Quince has always been winter-killed, although we have tried to protect it. The Spiræas do very well on our grounds, appearing to be hardy, and needing but slight protection. The same may be said of the Weigelas, of which I think we have tried four varieties. The Deutzia gracilis, with very slight protection, succeeds with us; we have no shrub on our grounds that gives more satisfaction. The Hydrangeas do very well, and we prize them very highly. The cut-leaved Sumach our Secretary spoke of is quite successful. We have really more plants than we require. I presume we shall have too much of a good thing by and by. I am only sorry, however, that I have not spent a little more time and money in the cultivation of shrubs. I admire them, and I would recommend every person to try them.

Mr. Croil.—The climate of my locality is such that we have only tried a few shrubs. The following varieties succeed very well, however:—the common white Spiræa, the Weigela, the common Lilac, the Syringa, the Clematis, and the Hydrangea paniculata. One little shrub that I think has not been mentioned is the Flowering Almond, a very pretty shrub, and another, the Smoke Plant.

Mr. A. McD. Allan, of Goderich.—I am afraid we are a little selfish in our district. We go in more for fruits than shrubs. We grow, however, the Clematis, the Weigela, and the Syringa, and I do not know any of them that we have found to be otherwise than hardy. But I must say that I have paid very little attention to shrubs.

Mr. President Saunders.—There are still a few shrubs that have been omitted. The Enonymus Americanus, or the Spindle Tree, or the Wahoo, is a very pretty shrub, not only in summer but in winter, and is covered with small fruit. The Daphne Mezereum has been condemned by Mr. Beall on account of its poisonous berries, but its flowers in spring are very beautiful. The Daphne Cneorum is not, however, open to that objection. Its flower has the odour of the carnation, and, although a very small shrub, is a very desirable one, and should not be overlooked.

COMMITTEE ON FRUITS.

The following Committee on Fruits was appointed, to report to-morrow morning:—Messrs. Honsberger, Leslie, Pettit, and Wright.

BEST VARIETIES OF STRAWBERRIES.

The next question, "The Best Varieties of Strawberries of Recent Introduction," was then announced open for discussion.

Mr. A. Hagaman, of Oakville.—Although I was formerly engaged in the growing of strawberries, I have recently done very little. But I know that the growers about Oakville have tried several of the new kinds, but that they have generally fallen back on the Wilson in preference to any other variety, for quality, cultivation, and a large market.

Mr. Morris.—We have fruited the Manchester, and I am very much pleased with it. The quality is good, and the plant is a strong grower. The Bidwell has not given satisfaction, although it might do better in a hilly country. It seems to set more fruit than it brings to perfection. The Sharpless I have not found profitable for market. It is good enough for amateur purposes, but it fails in quantity. The James Vick we have fruited from the spring-set plants. We are not yet in a position to judge of it very confidently; but it shows signs of being a very strong grower, and I should think of being very productive; but the accounts I have read of it speak of it being rather small. There are a great many new varieties that we have tried, but most of them are not worth growing.

Mr. L. Honsberger, of Jordan.—My experience in strawberries is not very extensive. I have experimented a little with new varieties, but unless a man has ample means and time at his disposal, I think he had better leave that work for others. My cultivation of strawberries has been for profit; and I have come down to a very few varieties. I do not think one who seeks for profit should exceed three varieties—Early Canada for early, Wilson's Albany for intermediate, and the New Dominion for late. The last winter has been so severe, however, that none of my strawberries have succeeded well. It has been the severest winter for strawberries that I have ever known. I cannot say much about the newer varieties. The Sharpless is a very nice berry to look at, but not much to taste; it appears to me to be deficient in flavour.

Mr. Morris.—My experience with the Early Canada has been so unfavourable that I have ploughed them all up this spring. I think they were about as poor as any we ever had.

Mr. A. M. Smith.—My strawberries have been a failure this year. We had some fruit from several new varieties, but I cannot pronounce any of them a success; but as they did as well as the old standard varieties, I suppose it would not be fair to condemn them. I am very favourably impressed with the Manchester, also the Bidwell, and Arnold's Pride. The last named may require a little protection in winter, but it is a very large berry, and very productive. For a late berry, I have generally stuck to the New Dominion, though it is getting old now. With regard to the Early Canada, it might be a little indelicate on my part to say much about that, it having been introduced by me,

but certainly I see no reason for disparaging it. Notwithstanding the adverse season, it did as well as any I had this year.

Mr. Beadle.—Unfortunately I cannot say much about the new varieties of strawberries. Jack Frost played hob with them this year—killed out all the Wilsons and the Early Canada, and I almost despaired of seeing any strawberries at all. However, I saw a few Sharpless. I agree with what has been said about the Sharpless—it is pretty to look at, but it will not pay anyone to grow it for market, except under peculiar circumstances. The soil must be adapted to it. It must be grown in hills and not in runners, and it must have a market where people will pay for a good-looking berry without paying too much regard to its flavour. Some people object to my views of the Wilson, because I do not admit it to be a sour berry. It is sour when it is not ripe, but when it gets the rich purple colour which belongs to it, it is not sour. The frost killed the blossoms of the Bidwell this year, and I got very few berries from it. So far, I do not think much of it: it does not ripen well; but I want to see another year, perhaps two years, before I can say definitely what I think about it. The Manchester pleased me the best of the three; but I dont think there is any money in growing the Manchester for market at present. The James Vick I fruited this year. The berries are small, but the plants look vigorous, and it promises well for another year. Those who have sent it out say it is the most productive strawberry in existence. Perhaps it is. I was reading the other day about another that is more productive still; and the result will perhaps be that the Wilson will be the survivor.

Mr. Croft, of Dundas.—Last season I grew the Sharpless, and had a good crop of splendid berries which sold well. I had also a fair crop from the Cresent seedling. The Wilson is a good berry, but it is played out; its vines appeared to dry out, while the Cresent seedling was thrifty and covered with fruit. From seven-eighths of an acre we picked three or four thousand boxes. But that wet weather prevailed when we picked them, I think we might have got fifteen or sixteen hundred boxes more. The Sharpless I consider a good berry, but the Cresent seedling, I think, will beat anything I have grown so far.

Mr. Morden.—All these varieties will occasionally do wonders, but the Wilson, and perhaps the Crescent, when fertilized, will hardly fail to yield a profitable crop. I have tried a great many varieties, and I expect to have to do in the end what the Secretary says: fall back upon the Wilson. All the other varieties do well occasionally, but they will not last. The Sharpless did well with me at first, but this year it did not. The New Dominion, half the time, bears remarkable crops of beautiful berries. They are too soft, however, to ship a great distance, and it will not do to glut the local market with them. The originator of the New Dominion, who is here, had a wonderful show of berries this year, when nearly all his neighbours, myself among them, failed. I think it would be well to hear from him.

Mr. C. H. Biggar, of Drummondville.—I have nothing to add to what has been said. I suppose I missed the cold, frosty weather. I had a good crop and did first-rate —that's all.

Mr. Dempsey.—I have been cultivating the New Dominion for some years, and it has been all I could desire for a late berry. I got the strawberry fever last year and ordered almost every new variety I could think of. This year they have been fruiting. In new varieties, I think Mr. Arnold's seedling is superior to almost anything else. To cultivate for profit, I would select merely the Crescent seedling and the Wilson, and plant four rows of one and then four rows of the other. Our Crescent seedlings this year commenced to ripen early, and when we were ready to make our heavy pickings of the Wilson, the Crescent was about done. We sometimes hear of the wonders done by some of these new varieties, but I have never seen any new variety that looked so nice in the basket as the Cresent seedlings we picked this year. They are large, about double the size of the Wilson, and they hold their size well, even to the last pickings; and as to their flavour, I find nothing to object to in it. They bear shipping to Montreal very well; we did, in fact, successfully ship some as far as Quebec. Nearly every one of the new varieties has disappointed us this year. The Sharpless did very nicely in the beginning; but we found that the majority of the berries, before they turned red, had rotted next to

the stem, so that all I can say is, that, comparatively speaking, they were worthless with us this year. We had some plants of the Bidwell that produced very well, but in the same row we found ten or twelve plants that had nearly nothing on them at all. The James Vick I have not tried, and from what I have learned about it I do not feel disposed to try it. A gentleman who fruited it this year told me the berries were about one-third of the size of the Wilson, and he is a gentleman who tells the truth. I should say that several of the new varieties have promised well this year ; but to take a dozen plants and fruit them one year is not a sufficient experience to base a recommendation upon. I should rather have a good-sized patch of them for a couple of years before I would condemn or recommend them. But two varieties that I can recommend are the Crescent seedling and Wilson's Albany.

Mr. Hilborn.—We grow something over fifty varieties of strawberries, and we have given the Crescent seedling the preference over all others, because it has been the strongest grower and the most profitable berry we have had. But this year the spring-set plants of this variety have been the poorest of any varieties we have. Of the new varieties, Arnold's seedlings have done well, and I would mention Bright Ida as the best we have tried. The Manchester and the James Vick have not done well. The plants of the James Vick are very good, but the berries are small. Of the spring-set plants, the Daniel Boone gives the best promise of any. We have also set out the Mrs. Garfield, but the plant is such a poor grower that we have not much hopes of it.

Mr. Allan.—With us, about Goderich, Arnold's No. 23 is very prolific, and a most delicious berry. Though very well fitted, however, for the home market, I fancy it will not do for shipping. The Manchester I consider a very excellent berry ; but those in our section who grow extensively for market confine themselves to Wilson's Albany, and as an amateur, I would not be without it for my own use. The James Vick I have only seen in spring-set plants ; but I would judge, from its delicate and slender foliage, that it would be a poor bearer.

Mr. Wright.—I only grow strawberries for my own use, and my experience is that the Wilson's Albany is the best and most productive grower. I grow the Sharpless so as to be able to show my friends something to talk about. The Triomphe de Gand has succeeded very well with me, but I now confine myself almost exclusively to the Wilson's Albany.

Mr. Read.—I wish to say a word for the Sharpless. The first year I planted it in a mass, but it did not do well. I found a great many of the berries had rotted before they were even ripe. This year I placed the runners at equal distances of three feet apart, and I had a splendid growth of large berries, well coloured, that carried very well to market. The Sharpless will grow very well, but it will not bear to be planted thickly, as it holds wet or dampness a long time. The Wilson can hardly yet be said to be superseded by any of the other varieties. I have had a little experience of the James Vick. The berries were not very large, but I obtained a good quantity for the first crop, and they were not seedy, as the gardners say. I have been very favourably impressed with the Manchester. It is a very long, thin plant, and that circumstance accounts for its productivenes. The Nicanor is before all, in my opinion, as an early berry. It has a delicious, rich flavour. I intend to grow it very largely next year.

Mr. Hilborn—We tried the Nicanor two or three years ago, and it is valuless—no earlier than the Crescent seedling, and not nearly so large a berry, or so productive, and we have discarded it altogether.

The Association then adjourned to 7.30 in the evening. On resuming at that hour the question of

CURRANTS, CULTIVATION AND VARIETIES,

was taken up for discussion.

Mr. President Saunders.—If no one else feels disposed to open this question, I would like to state the success I have had with Fay's Prolific. I grow most other varieties, but I have been really surprised with Fay's. I paid $1.50 for it. It has received

the same cultivation as the other varieties, and I must say from what I have seen of it, that I think it is the most promising red currant we have ever had brought before us. Most varieties of currants have succeeded very well in our section this year. We have had the usual troubles to contend with, such as the green worm, and the saw fly, as it is called ; but by watching the bushes, and dosing them with hellebore, we have managed to preserve the bushes and get very good crops.

Mr. Gott.—With respect to the currant, I may say that the interest in that fruit, and the demand for it, are very much on the increase in this country. The culture of the currant is very simple. The land should be rich and well drained. The more suitable the soil the better will be the fruit. The bushes may be planted from four to five feet apart, and three feet apart in the rows, and they should be kept clean, well pruned, and well attended to. The results will be very fine. As to varieties, the old Dutch Red seems to be the standard variety still. Most of the other varieties introduced, though good enough in themselves, appear to be unsuited to this country. We have not had a great deal of experience with Fay's Prolific as yet, but the promise is that it will be something fine. The varieties attracting most attention, however, are the blacks. The whites appear to be unsaleable, there being no demand for them. Among the best of the blacks is the black Naples, it having been found superior to the old black English. The newer black introduced—Lee's Prolific—is not, so far as my experience goes, much improvement on the black Naples. We are exceedingly anxious that the demands for this fruit shall be met by liberal planting and a very liberal cultivation. There is no reason whatever why we should not have a very large and fine supply of currants. So far as enemies are concerned, our scientific horticulturists should be fully able to deal with them.

Mr. Hilborn.—We do not grow currants very extensively, but I intend to increase the plantation. We have grown Fay's Prolific this year for the first time, and it is certainly most promising, and we expect great things from it.

Mr. Hagaman.—I have grown currants for five or six years. If they are planted in good soil and receive good cultivation and plenty of manure, there need be no difficulty in raising fair crops.

Mr. Morden.—I cannot say a word in favour of black currants, so far as my particular locality is concerned. I believe they have succeeded in some parts of Ontario, but with me and my neighbours they have failed entirely. I have tried various varieties of them : the Black English, the Black Naples, and some nondescripts. On our sandy soil we have not been able to get currants of any size except a rare and exceptional currant.

Mr. President Saunders.—Perhaps the soil has more to do with the failure than the particular locality.

Mr. Morden.—I have no doubt it is the soil. With regard to the ordinary red currant, it is very nice to look at, but as a matter of profit it is a delusion and a snare. The White Grape currant yields a large and very fine quantity of fruit, but there is no sale for it ; so that, I would advise any man who grows for market, to go very sparingly into the cultivation of the White Grape currant, although it is a very nice fruit. It is generally conceded that the old Red Dutch is the most profitable ; but I happen to have a variety that beats the old Red Dutch altogether—the Raby Castle. I have never seen it advertised. Its foliage closely resembles the foliage of the black currant, and it holds its foliage all summer, and even to the month of November, weeks after the ordinary currant bushes have lost their foliage. I found this summer that the ordinary currants threw their foliage before they were ripe, and I had to pick them at once. The Raby Castle, however, holds its foliage, so that the currants ripen perfectly. We think it is better in quality, and it is a trifle larger in size, than the ordinary red currant. It seems to bear more and larger bushes. I can make more from one of these bushes than I can from five of the other currants. My neighbours, I find, are after it. I cannot at the present time think of any particular in which it does not beat the ordinary red currant.

Mr. Hoag.—Have you Fay's Prolific ?

Mr. Morden.—I have not, and do not expect to get it while it maintains its present price. If it is as large and productive as stated, and will hold its foliage as well as the one I mention, of course it is a great acquisition, but that is a matter of doubt.

Mr. Hilborn.—We have a currant that answers the description given by Mr. Morden of the Raby Castle. I never heard any name for it, but it certainly does better than any old currant we have.

Mr. Biggar.—I can corroborate every word Mr. Morden says.

Mr. Hoag.—I am not a currant grower, but those who grow them in the neighbourhood of Lockport, say that Fay's Prolific is far the most profitable thing they have taken hold of. It is becoming very popular among the cultivators of currants.

Mr. Beadle.—I would like to ask if anyone has yet fruited that new black currant rising up in Great Britain, called the Champion. I suppose, like all the rest of the new things, it is going to beat everything else. With regard to black currants, on my soil, which is rather light, I have experienced the same difficulty that Mr. Morden speaks of. I can get good-sized berries, but I cannot get so large a crop as I think the bushes ought to yield. Therefore, I cannot say that black currants are profitable, though I am not growing them for market. Neither the Black Naples nor Lee's Prolific pay very well on my soil, though perhaps on other soil they may; and the difference between the Black Naples and Lee's Prolific is so infinitesimally small that it appears to me not worth while talking much about. Then, with the red currants that we have been growing for their size, the Cherry and La Versaillaise, I find very much the same difficulty as I do with the black currants—I can get large berries, but not enough of them; and I agree with Mr. Morden that anyone who plants the Cherry and La Versaillaise for market, unless he gets a very high price per quart, will find that he can do better in something else. For quantity, I have not seen anything better than the old Dutch. The Raby Castle I have had, and have yet. It seems to me that Houghton or Houghton Castle is another of its names, though I will not be positive on that point. I have found it to hold its leaves remarkably well, and yet I do not know that it does so much better than the Red Dutch. I have fruited Fay's Prolific, that new currant that is creating such a sensation—and I think deservedly so. It is nearly as large as the Cherry currant. The strings of berries are twice as long as those of the Cherry currant; and one advantage it possesses is that for about half-an-inch next the branch the strings are bare, so that they can be picked off without danger of smashing any of the berries. It is a very nice berry to pick for market, and I believe the man who has ten acres of that variety planted to-day will find that he has a good paying investment.

Mr. President Saunders.—What about the quality?

Mr. Beadle.—I do not find it quite so acid as the Cherry currant. I am not particularly fond of currants myself. Black currants are my abomination; and the Cherry currant is about as bad; but if acid currants are cooked, and their flavour modified with a little sugar, they make very good eating. If I have to take currants, however, I will throw away every variety for the White Grape. I think Mr. Morris could give us some information of a new variety introduced in Rochester. I have fruited the White Gondoin, but I do not see that it is better than the White Grape. I go back to the White Grape as on the whole the best white currant we have ever had.

Mr. Morris.—The currant Mr. Beadle refers to is, I believe, called Moore's Ruby. I believe that variety will meet the objections which have been raised against the others on account of their acidity. It is pleasant to eat from the hand, and is very productive, although not quite so large in size as the Cherry.

Mr. Allan.—I have been very well satisfied so far with the Cherry for red and the Grape for white. Both varieties have succeeded admirably with us on a light sandy loam. When I say that, I do not speak as one who grows for market, but as an amateur. The blacks grown by us are the Black Naples and Lee's Prolific. As the Secretary has remarked, it is a question whether there is really any difference between the two, and either will fill the bill in our section. The cultivation we employ is to fertilize with barnyard manure and wood ashes, and to take care every year to thin out the bushes properly.

Mr. Coot.—My experience in currants has been small. I purchased a piece of ground in which there were 250 bushes of black currants. I manured and cultivated them well last year, and got what I thought was a miserable crop. However, this year I again manured them well and cultivated them well; and from those 250 bushes I got

150 quarts of currants, paid two cents a quart for picking, and sold them for six cents a quart. That satisfied me, and I am going to dig the bushes up.

Mr. Beadle.—Have you grown any red currants?

Mr. Coot.—I have not; but I think, after the way you have spoken of Fay's Prolific, I shall be inclined to try it.

Mr. Morden.—With regard to the cultivation of the currant, I have found that the tree system is hardly the thing. It does very well, so far as convenience in cultivating and in gathering the fruit is concerned; but the currant stem is a short-lived affair. I have tree currants in which the stems are about eight years old, and are mostly rotten. I partly dug them up last year, and will dig the rest this year. The true policy of currant raising is to get rid of the old wood—that is, older than three years—and keep getting in a newer growth all the time. If you wish to grow the trees, you should make up your mind to dig them out entirely within six or seven years, and replant. A great deal of the failure in fruit growing to-day is due to the fact that people often neglect to replant in time. If we do not do this, we shall fail, both in currants and gooseberries.

A Member.—What is the cause of the tree decaying?

Mr. Morden.—A currant tree is past its time of growing when it is ten years old. An apple tree will last twenty or thirty years. The currant trees I refer to will produce fruit and leaves, but the fruit is small and inferior. You cannot, by any artificial means, make a currant tree last for ten or twelve years, and keep healthy. As it grows old, you will find that the original stem becomes rotten and worthless.

Mr. Allen Moyer, of Jordan.—The currant that has given me the best satisfaction is the Victoria, a red currant. I have a row that has been planted eight years. It is not more than sixty yards long, and this year I picked over 300 boxes from it, and the bushes seem to be as healthy as ever. I do not think I have had over one-third of that quantity from the same number of bushes of the Cherry plant. The quality of the Victoria is good. The wood seems to be tough, so that it does not break down like some other varieties. Some of the Cherry bushes that I planted at the same time have broken down. The Victorias I sold at six and a-quarter cents a box. Black currants have not done very well with me. Some of them have measured over two and a-quarter inches in circumference. I planted them on rich black soil, but I made a mistake. This year I suppose I shall not get more than forty boxes from five hundred bushes. The variety is the Black Naples, which I believe gives satisfaction to some and not to others. On the whole I cannot offer much encouragement in the growing of black currants, although I have known good crops to be reaped. So far, the Victoria is my favourite. It is naturally a very nice round currant, and the bush needs very little pruning.

A Member.—Do you tree them, or allow them to branch out from the root?

Mr. Moyer.—I agree with Mr. Morden with reference to that. I do not like the tree system. My Victorias are still pretty much in the first wood, and the tree system might work very well with them. They do not sprout, but they spread and increase their wood.

A Member.—What difference do you find between the Victoria and the Red Dutch?

Mr. Moyer.—I think the Red Dutch currants grow nearer to the wood, and you cannot pick them without smashing some of the currants, or getting leaves in.

Mr. Beadle.—Do you not find the Victoria to ripen later than the Red Dutch?

Mr. Moyer.—The Victoria will keep its colour as long as any. It is not so soon as the Cherry currant, although to me soonness is no objection. I want something soon in currants.

Mr. Wright.—In reds I grow only two varieties. One is the Versaillaise, which I find the best. I had samples of it this year which measured two and a-quarter inches in circumference. It grows very heavily too. I have also the Cherry, but it does not grow so large or yield so good a crop. The White Grape does well with me, although it does not grow nearly so large as the red. In blacks, I have the Black Naples, Lee's Prolific, and Black English. Lee's Prolific I prefer.

Mr. Dempsey.—We cultivate the currant to a small extent. The Victoria that we have grown I did not like much, and discarded it entirely. Still it was a good grower, and produced well. It matured later than the others, and hung well on the bushes. We

find that soil has much to do with success in currant culture. We grow currants on a very warm, dry soil, where they mature early, and they bring good prices on the market, generally ten cents a basket. We also cultivate them on a deep moist soil that requires to be under-drained, and obtain very nice currants that bring ten cents a basket at the present time. On the other hand, currants grown on soil between these two kinds have only brought about five cents a basket, and it has been exceedingly difficult to get rid of them at that price; so that I am of opinion that soil and culture have more to do with profit in currant growing than the varieties selected. The varieties that we cultivate are the Cherry and the Versaillaise. I like the Versaillaise best, on account of the bush being a little more thrifty and rapid in growth. I fully agree with Mr. Morden with respect to stem culture. Even if we do not cultivate the bushes as trees, we find that when they attain age, it is better to throw away the old bushes and replant. I think currant bushes should not be retained more than eight or nine years at the longest.

Mr. President Saunders.—Have you had any experience with Fay's Prolific?

Mr. Dempsey.—No; I got Fay's Prolific, but I am sorry to have to tell you it did not live. I have my doubts, however, about it having been in reality Fay's Prolific; such "doctoring" does sometimes occur. The black currants this year have been almost a failure with us. We never cultivate them very extensively; in fact, we confine ourselves to one bush of each variety. We have Mr. Saunders' Black, and we prize it very highly. We have also the Black English, the Black Naples, and a couple of varieties of seedlings of my own, which are very fine. This year there was a very rapid growth of the leaves of our black currant bushes. Everybody in our section had the same experience—the foliage dropped off before the currants matured, and the currants failed. If we can maintain a moisture in the soil, and such a thrifty growth in the bushes that they will retain their foliage, we can have the currants almost as late as we like—nearly any variety. What is the object in growing them in moist soil? To have them late in the season.

Mr. Drury.—I would like Mr. Dempsey to explain what he means by the term "doctoring."

Mr. Dempsey.—There is a system practised by some fraudulent nurserymen of advertising certain new varieties of fruit, and offering them for less money than the originators could possibly afford to sell them at. Then they will scald the root of the plant they sell, or do something to prevent it from growing, expecting as the result to hear some grumbling. Well, they want to retain a name for honesty; so they offer to repeat the order next year, and in the meantime they can buy the right thing and sell it at a profit.

Mr. Beall.—I grew some currants for a time and tried to make some money out of them, but they were a failure. I found that my currants, by the time I got them to the market, cost me more than I could get for them. Therefore, I have abandoned the cultivation of currants, and think I can use my land to much better advantage.

Mr. Morris.—I have seen Fay's Prolific this season, and I am very favourably impressed with it. Both the berries and the leaves bore a great resemblance to those of the Cherry. There is another red currant not yet mentioned which I think the best of all, that is, the Fertile d'Angers.* It is nearly as large as the Cherry, and I think it is as productive as the Dutch or the Victoria, and has a good flavour. With regard to "doctoring," I got a supply of plants this spring doctored in the same way that Mr. Dempsey speaks of. Perhaps they came from the same party.

Mr. President Saunders.—There is a gentleman present who is ready to give us some information with regard to the prices the canning companies in the United States are paying for fruit this year, and have been paying for some years past. If it is your pleasure, we shall now hear Mr. Fenton, of the Erie Preserving Company.

Mr. Fenton.—Gentlemen: I am pleased to meet you this evening, and I hope you will derive some benefit from any information I may give you. My company have four factories established in the State of New York, and they gather fruit from four counties —Niagara, Erie, Chatauqua and Cattaraugus—and we purchase large quantities of strawberries, raspberries, in fact, all small fruits, as well as peaches and apples. In these

* Fertile d'Angers is a synonym of the Versaillaise.

counties the farmers generally have gone into fruit growing almost altogether, finding it more profitable than mixed farming. A great many of them have planted out their waste places and marshes in cranberry bushes, and thus derive good profits. A great portion of the waste places in Canada, it seems to me, might be similarly utilized. Some of the farmers also cultivate small fruits, such as strawberries and blackberries, in their orchards among their apple and pear trees. The Wilson strawberry, the Gregg black, and the Philadelphia and Cuthbert red raspberries, are the most popular varieties of these fruits.

Mr. President Saunders.—What prices, as a rule, are paid by the factories in season?

Mr. Fenton.—We have bought this year about 200,000 quarts of berries all told—strawberries, raspberries and currants. For strawberries we paid seven cents a box; for raspberries, ten cents for red, and from seven and a-half to eight cents for blackcaps; for gooseberries, $1.60 to $2.00 a bushel, according to variety; for peaches, from $2.00 to $2.35 a bushel. We are contracting for Bartlett pears at $5.00 a barrel. Flemish Beauties at $4.00, and Belle pears at $3.00. The price of apples will range probably from $1.50 to $2.50 per barrel. The crop is reported to be very short.

Mr. Roy.—Does that include the barrel?

Mr. Fenton.—Yes.

Mr. Morden.—What is the price for currants?

Mr. Fenton.—For the small red currant, $2.00 a bushel. These are made into jelly, and I do not think the factories could afford to pay any more. I do not think they are half so remunerative as raspberries.

Mr. Roy.—Do you pack any plums?

Mr. Fenton.—Yes; we bought some at $1.50 a bushel near Owen Sound. We put up the damsons, which came at fifty cents a bushel below the other varieties.

Mr. E. Ashley Smith.—Which is the most profitable—the white or the blue?

Mr. Fenton.—The white varieties are better for the packers, because they are more attractive looking. There is a great deal in making an object look nice; it takes the eye of the consumer. In the discussion to-night on currants, it was said that the red currants were sour. I don't care how sour they are; if they look handsome, they will sell well.

Mr. Morris.—Which colour of peaches do you prefer?

Mr. Fenton.—The yellow by far, and the larger the better. We can afford to pay three times the price for a large peach that we do for a small one. The rule is, the larger the fruit the better the flavour. It is well enough to follow up new varieties to see if we can get anything better than we have, but I think it would be more profitable to spend our time in improving the varieties which we have already. New varieties of strawberries are always coming to the front, but the growers always go back to the Wilson's Albany. It is hardy, able to stand transportation, and has good colour and size. Our farmers are accustomed to cover their strawberry fields with straw, upon which they lay rails to prevent it from blowing away. By protecting their vines in that way they have no complaints about one season being much better or worse than another. I have known as many as 4,000 quarts of strawberries to be picked from an acre.

Mr. Beadle.—Would the prices for berries that you mentioned be the average price for the last ten years?

Mr. Fenton.—No, I think not. I think the average price for the seven years past for strawberries has been five cents, for black raspberries six cents, and for red eight cents. Five cents is the lowest price we have got strawberries for. We find it most profitable to contract with the growers to take their entire crop. Cranberries are going to be an increasingly profitable crop in the future. Our farmers got $5 and $6 a barrel for hand picked cranberries last year. They plant them in the marshes, and they have a sort of rake contrivance by which they gather them. I do not know but they make more out of cranberries than out of strawberries or raspberries.

Mr. Beadle.—If our farmers in this district went largely into strawberries and raspberries, would they not swamp you?

Mr. Fenton.—My instructions are to contract with farmers to grow so many acres of strawberries, and deliver them three years hence.

Mr. Beall.—What would you agree to pay for strawberries, taking the entire crop two or three years from now?

Mr. Fenton.—I think my firm would give six cents a quart for the entire lot, delivered at the factory. They have hitherto been bought by the ordinary basket, but some of the fruit growers have been talking of holding a convention to decide upon weights. Some pickers will give good honest measure. The right method, for buying and selling all kinds of fruit, is weight.

Mr. Morden.—A poor, small raspberry will sometimes weigh very heavy, while a superior one will be light; so that weight is not always the safest method. I think perhaps these canning factories will be the salvation of the growers of small fruits in times of glut. But how this gentleman manages to get any great quantities of fruits at the prices he mentions I do not know. He speaks of getting plums for $1.50 a bushel; while for some varieties I am getting as high as $5.50 Blackcaps, which he says he has got for seven and a-half cents a quart, I will undertake to say cannot be profitably grown or furnished at that price, unless under some very exceptional circumstances. At the same time we have sometimes been obliged to sell our fruits at retail for less than we could have got at wholesale; so that in times of glut, if the factories would give these prices, they would be a decided advantage. Although they would not be giving us remunerative prices, they would prevent us sacrificing our crops.

Mr. Fenton.—With regard to raspberries, some three years ago we had a very large crop of raspberries, and they were bought at seven cents a quart at the factory. The picking cost the growers one and a-half cents a quart, but they had no loss from transportation or from commission-men's stealing. The price I have named is net. I have no doubt the gentleman's price was what he realized on the market. He did not tell us what the cost of the transportation was.

Mr. Morden.—I sold the berries on the spot for twelve and a-half cents, and pocketed the cash.

Mr. President Saunders.—I am sure we are all obliged to Mr. Fenton for the information he has given us. He has given us an idea of what we can do with the surplus of our fruits.

EFFECTS OF LAST WINTER.

The next question for discussion was: "The Effects of Last Winter Upon Fruits generally."

Mr. Honsberger.—The effects of the past winter upon fruits generally have been in my case very severe. Strawberries were almost entirely destroyed. Raspberries stood the winter very well, and I had a very fair crop. Currants appeared to suffer some, yet I had what I would call a fair crop, especially of blacks. Peaches also suffered, yet I think last summer's "curl leaf," as we call it, had more to do with the failure of the peach crop this year than last winter. My apple crop is somewhat light, although my orchard is young and I could not expect much from it. The Rhode Island Greening did very well—in fact, it is the only apple I have this year. It is rather surprising that last year the only apple I had was the Northern Spy. Next year it is hard to say what variety I shall have. As I said at the beginning, the winter has been a very severe one for all kinds of fruit.

Mr. Dempsey.—I think we have never had so favourable a winter for the wintering of fruits as last winter was in our section of the country. Snow fell in November, and we thought at one time that it was going to stay until May; but it left before that time. We found that our strawberry vines had actually grown during the winter under the snow. Our raspberries also came through the winter well. Our apple trees had suffered from the absence of snow in the previous winter, the roots having in many instances been frozen; so that some trees failed to recover. Those trees that did recover, however, are this year making very fine progress. We have no complaints of last winter; therefore; but what has caused our fruits to fail this season it is difficult for us to say. We had abundance of blossoms on our orchards, the bloom was good, and the fruit at one time

appeared to be setting, but we find that there is very little. In a few cases, where, from some natural or artificial cause a tree is protected, it is loaded with fruit. I have, for example, a Seek-No-Further tree, the branches of which are mingled with those of some maple trees surrounding it, and that tree is pretty well loaded with apples. A short distance from that are probably fifty trees bearing the same variety, but I think it would be difficult to find one dozen specimens on the whole of them. So that the cause of the failure of the fruit to set appears to me to have been purely atmospheric.

Mr. Gott.—One of the worst effects of the winter we experienced was that the mice, being so thoroughly protected by the deep snow, had full opportunity to do harm to our fruit trees. Snow fell early and lasted long, and when it disappeared the disastrous effects left by the mice were perfectly appalling. In some cases young orchards of fine promise were almost entirely blasted by them. Another disastrous influence was the formation of ice on the top of the snow, from half an inch to an inch in thickness, that greatly injured young apple trees and other tender stock. These influences, and particularly the mice, were very destructive throughout the whole of the western country.

Mr. Dempsey.—One of my neighbours, thinking that he was going to do his apple orchard a kindness last fall, protected the trees with pea straw. They had been producing well, and he was anxious to save them ; but, to his surprise, this spring they lacked bark, and did not even bud. The mice had their nests in the straw all winter. So, I fancy, if we could keep the mice out of our orchards in the winter, there would be little danger of their suffering. I would like to ask the President how he would keep the mice away.

Mr. President Saunders.—Very simply—by giving them a dose of poison. Get some strips of pine lumber about six inches wide and six feet long. Fasten two together in the form of a trough, and place a piece of shingle midway between the ends. Place this face downwards on the ground, putting inside a good supply of about one part arsenic to about three parts of meal, and keep the mice well fed on this all winter. They will find this cosy retreat so warm and comfortable that very few of them will disturb the trees. In that way we succeeded in keeping a large orchard free from mice.

Mr. Roy.—We had an excellent crop of strawberries and raspberrries, some of the latter being unusually large. So far as apples are concerned, I have made it my business to go for eight or ten miles around Owen Sound, and I find that summer and autumn apples are a good average crop ; but winter apples are almost an entire failure everywhere. My summer apples—Red Astrachan and Early Harvest—have done so well that I have had to prop up almost every tree. Pear trees are nearly all blighted. There is scarcely one that has not three or four branches blighted. But the crop will be pretty fair.

Mr. Beadle.—Have you had much hot weather in Owen Sound.

Mr. Roy.—No. Some of the days have been pretty warm, but the evenings have been cool, and I suppose that has been largely the cause of the blight. With regard to plums, about three weeks ago we had expectations of an enormous crop about Owen Sound. Everywhere the trees were laden to the ground. But suddenly a blight came upon them ; every leaf was perforated with little holes, and nearly all the trees lost both their foliage and their fruit. I suppose that there will not be one-fourth of the crop of plums that we expected. In addition to that, the black knot has been troubling us. It showed itself in 1881, and in 1882 it became very bad indeed. This year it is no better. There is scarcely a branch that is not affected by it.

Mr. Beall.—It seems to be taken for granted that last winter was unusually severe. I do not know in what way it was so. It was not as cold as usual ; that is, the mean temperature was not so low as usual. The south-west winds were higher than usual, but we had not nearly as low a temperature in solitary places as we had the winter before. I do not know of anything occurring in the winter to injure the fruit crop, in our neighbourhood at any rate, in any way whatever. We never had as good a crop of strawberries as we had this year. Raspberries, currants and gooseberries were unusually good. Apples are not a success, but this is not owing to the winter—at least, I do not think so. The leaves came out very heavily in the spring. We had fine foliage and also a fine show of blossom. Everything seemed to promise an abundant crop ; but just about the time the blossoms opened the rain set in, and we had continuous rains for a week or ten days, so

that I think it was the destruction of the pollen that destroyed the apple crop. What few pears are grown there were affected similarly, but not so severely. The wind storms that we have had lately have, however, destroyed the pear crop. A few years ago I was troubled a good deal with mice, but since then I have had no difficulty. I allow no grass or weeds to grow in my orchard, and I never see a sign of mice.

Mr. Morris.—I think the effects of last winter in the Niagara district have been the most disastrous of any winter I have ever known. I do not believe the cause of the injury to the fruit crop has been atmospheric, but was the extreme dryness of the ground at the time the winter set in. I notice that fruit trees or vines have suffered most on little rises of ground or knolls, where the ground was high and dry, and where the wind blew the snow off; and that after the frost set in last fall, the ground remained frozen until spring. We had not the usual January thaw which might have allowed the moisture to settle down. I do not believe we have seen the full effects of the winter yet. I have noticed quite recently large apple trees turning yellow and dropping their leaves. I have seen large grape vines with the top roots dead.

Mr. Beadle.—I want to tell Mr. Beall that, although I grant all he has said about the winter not having been so cold as some winters we have seen, yet for some reason I do not understand, the winter, or something connected with it, has done more harm to fruit trees and vines in this section of the country than I have known in thirty years' experience. Strawberry plants, even as hardy plants as the Wilson, were killed root and branch, and in some cases young grape vines were killed. Now, what killed them? If we cut off the branches from these same grape vines in the spring before the leaves came out, and stuck them in the ground, they would grow; but if we left them on the plant they would not grow. The roots were dead; the tops were not killed. I cannot understand it—I just give you the facts. A few rods north of me, along the roadside, there is a row of balsam fir trees about twenty feet high, and some half-a-dozen of these trees were killed. They have turned red during the summer, and yet there are others in the row as fresh as ever. Mr. Morris said he noticed that where the plants were exposed on high ground they died. I noticed just the reverse. Those of my grape vines which are on the highest ground, where the snow blew off and some of the soil with it, are alive and thriving to-day, and I cannot see that any injury has been done them, while vines which grew on lower soil are more or less dead, both the roots and the tops having been killed. So with the apple trees. I find some of the older apple trees and some of the older grape vines are sickly. Hardly anything has escaped; I have a mulberry tree one half of which lives and the other half is dead. I agree with Mr. Morris that, whatever may be the cause, we have not seen the whole of the injury yet.

Mr. E. Ashley Smith.—I agree with Mr. Morris with regard to the locations in which fruit suffered most during the last winter. My observation, in travelling considerably, both on this side and on the other side of the river, has been that almost invariably both young and old grape vines and fruit trees suffered most in such places as the tops of knolls or the sides of hills exposed to the south or south-west winds, and where the ground was dried out the most thoroughly; and also on dry soils of a light, sandy nature, even where the surface was comparatively level. In some old vineyards I have seen destruction that was heart-rending to witness. The Secretary said last winter was the most severe in this regard that he had known for thirty years. That tallies with my experience. I remember, however, several years ago, I think in 1877.

Mr. Beadle.—1874.

Mr. Smith.—Perhaps it was 1874—I lost a large number of pear trees; and I noticed that the trees that suffered the most were those that were vigorous and strong, and fine growers; but they were planted on sandy soil, and were in all cases exposed to the south and south-west winds, as was the case last winter. I see no other reason for the destruction, therefore, than the extreme dryness of the soil, together with these severe winds. The destruction is extremely large all over the country; and in certain locations on our side where vine-growing is carried on quite extensively, the vines have suffered tremendously—I might say that hundreds and hundreds of acres have been frozen out altogether. I don't think we have seen the end of it yet.

Mr. Morden.—Mr. Smith has said the most of what I had to say. The fact is

there is a strip of country on both sides of Lake Erie where the snow disappeared before spring fully opened up. The same thing occurred in 1874, and we had the same occurrences. This year, in this particular portion of Canada, the snow went off before spring opened; we had a heavy rain storm, and after that the thermometer went down below zero. Such a thing seldom happens in this part of the country. The result is, that the fall wheat all through this part of the country is destroyed. Most of my vines have died this year, and this has occurred where the south-west winds strike. Unfortunately for myself, I had not grown any weeds and the ground was bare. Quite near me a gentleman, with the same soil and the same exposure, who grows weeds, and who has thousands of vines, had not one vine destroyed. But, unfortunately, the rose bug came, and he has not a grape this year, where he ought to have had tons and tons. In this part of the country the winter was severe, as compared with other winters, but from Toronto east, I think it was not so severe.

Mr. Hoag.—You have had some winters with as low a temperature, when there was no injury?

Mr. Morden.—Yes.

Mr. Beadle.—At my place the thermometer did not register more than four or five degrees below zero during the whole winter.

Mr. Morden.—It went down to eight or ten degrees with us—in one night, thirteen.

Mr. Roy.—If the loss of pollen was the cause of the failure of the winter apples, why did not the summer and autumn apples fail also from that cause?

Mr. Morden.—The winter apples blossom a few days later than the others.

Mr. Roy.—I know the rains destroyed a great many of the grapes by washing away the pollen; but I cannot see that the same theory holds good with regard to apples.

Mr. Drury.—I would suggest that, inasmuch as we are all agreed that from some cause there has been considerable destruction to the fruit crop, and inasmuch as we are not likely to have any influence on future winters, we do not spend too much time in this discussion.

Mr. President Saunders.—Before this subject passes, I would like to propound one more theory, though I am not particularly wedded to it. In the neighbourhood of London, I think, we had a particularly favourable winter. We had plenty of snow; the weather was favourable at the time of blossoming, and I thought we were sure of having an excellent crop. The fruit set, but it had barely set when it appeared to be attacked by a species of rust which spread over the young fruit and caused it to drop. This rust was not quite so apparent on the apple as on the pear. There was a great deal of mildew; and this rust is another form of that low type of vegetation. It is possible that may have had something to do with the failure of the crop, although it is a curious fact that the gooseberry, which is very subject to mildew, should have thriven so well as it did where this mildew prevailed.

Mr. E. Ashley Smith.—It appears to me that it is very important that we should, if possible, get at both the cause and extent of the destruction. This must have an important bearing in determining the course we should pursue in order to keep up our standard of fruit growing, and to protect our vines and fruit trees from similar calamities in future. If the plants have suffered for want of protection, this suggests whether some sort of mulching should be pursued, and if so, what sort? It appears to me that this is a most important question.

Mr. Gregory.—With regard to mulching, I may say that last year I set out about 1,000 grape vines. I mulched about two-thirds of them, and in the latter part of the season I covered this mulching with earth; the balance were not mulched at all. This spring I could not see any difference between those that were mulched and those that were not. They all suffered about the same.

The Association adjourned to nine o'clock the next morning.

On Friday morning, August 30th, the President took the chair at nine o'clock.

WHITE GRUB.

The first question taken up for discussion, was "White Grub, and means of checkmating."

Mr. Biggar.—I believe Mr. Morden has been very much troubled with white grub. I would like to hear his views.

Mr. Morden.—As this is one of the subjects I suggested, I suppose I ought to say something upon it. It has been stated frequently that salt applied to the soil is a remedy for white grub. I have tried that to some extent, and I am doubtful of its efficacy. I imagine that sufficient salt added to the soil to destroy the white grubs would destroy vegetation also. These pests are, with us, a very serious matter. One of the remedies for them, in the grub shape, is, to keep the ground constantly stirred. If that is done the parent beetle will not deposit its eggs. These white grubs live in the ground for a few years, and then develop into what are known as June beetles. This beetle, the parent of the grub, can be dealt with with considerable ease, and it is of it that I wish to speak particularly. In June, just as soon as it begins to get dark, the air is full of these beetles. They feed largely on the plum, the raspberry, and occasionally the cherry. By the aid of moonlight or of a lantern, you can catch any quantity of these beetles after dark. My children, one evening, in a little while, caught over a quart of them. The next morning it is great fun to feed them to the hens or ducks, which are very glad to get them. As soon as daylight appears, these beetles crawl down into the crevices about the trees, and the fowls and ducks will sometimes find them there. But I have an entomological society with a very active and efficient committee on my own premises, all wrapped up in a very small space and covered with feathers, and we call it Jack. It consists of a pet crow, which is of immense value to me in destroying the beetles. He knows all about them and the white grub. He takes the white grub out of the ground If you watch him, you will see him stir the ground a little with his bill, and out comes a white grub, which he devours. He spends all day hunting for white grubs in the ground, and beetles in the cracks and crevices, and if he gets tired eating them, he goes on gathering them, and stores them away for future use. But my entomological committee does more than this. If you were at my place, at the present moment, you would find Jack limping up and down among the rows of grape vines, destroying beetles and worms of almost every class. If they are upon the trellis, he will fly up and take them off. You may not be able to see the insects, but he will always see them. Throughout the season, he keeps my grape vines free of nearly all kinds of insects. He is not very fond of fruit either. He only eats a little fruit occasionally for mischief. He likes meat better, and will eat insects from morning till night. Now, the sum and substance of what I have said is this—that with a family consisting of a few active children, with a few ducks, and with a pet crow or two, you can destroy the white grub and the parent of the white grub in hundreds and thousands every year.

Mr. Drury.—It is not every man who has a family of active children, or is fortunate enough to own an educated crow. However, I am glad to hear this testimony by Mr. Morden, on behalf of the crow. In my part of the country, we have a very good supply of crows, and I have been somewhat in doubt as to whether they are friends or enemies. But there is one thing certain—our crows have a great liking for corn, and for that reason, they incur the displeasure of a great many of our farmers. But this testimony is important, and if the crow is such an enemy to insect pest, he ought to be encouraged.

Mr. President Saunders.—The question hangs on whether the crow is sufficiently well educated in this country, and in the absence of schools for him, the testimony of experience is, on the whole, rather against the crow. He is so destructive of grain, and requires so much of it, that it is not likely that any evidence we can bring forward as to his abilities as an entomologist would be sufficient to counteract the evil opinion so many farmers entertain of him. There is no doubt that the crow likes to follow the plough and pick up white grubs. This fact has been noticed by entomologists for a long time, and on that account a word has occasionally been put in for the crow. But it is with

the crow as with other birds which we try to make entomologists of—he is not discriminating, but devours useful as well as injurious insects, and is thus liable to do a great deal of harm as well as good. Unless you can get the crow to discriminate between our friends and our foes, he will not be found to be so valuable as Mr. Morden fancies—at least the Entomological Society would hardly admit him as a member. The suggestion Mr. Morden has made about capturing and destroying the insects is a good one; but I think he is a little out with regard to the habits of the insect during the day time. I think all entomologists agree that the June beetles conceal themselves among the leaves of the trees during the day time, hanging by their hind legs, which are specially adapted to that habit; and hence, in addition to the recommendation made to catch them at night when they are active, I would suggest that you can shake them from the leaves of the trees in the day time, when they are torpid. You can catch them in that way much easier than you can at night.

Mr. Morden.—You can shake them at night too.

Mr. President Saunders.—They fly at night, but in the day time they are quite torpid and do not fly at all. After being caught they can be scalded and fed to hogs or chickens. It is best to destroy them in the insect form. They take three years or so to complete their growth. There is no remedy that I know of equal to salt or lime, or some kind of saline article, which, however, would require to be used in such large quantities that you would injure the crop before you would get sufficient to destroy the insects. Hogs, in a field where they will not injure the crops, will root up and destroy the grubs very promptly. Skunks are also useful in the same way. They live on grubs, and are very expert at catching them. They put their sharp mouths into the hole where the grub or worm lies, and have a remarkable faculty for digging them out. But we ought to combine all these remedies, if possible—we want to destroy the grubs when plentiful and also the perfect insects. When a person, who suffers one year from these grubs, puts a little lime on the soil, and the following year is free from them, he is apt to conclude that that is a sovereign remedy; but the probability is that the grub is still there, but too small to be noticed. Hence, experiments require to be repeated in different years and in different ways to prove that they are what they profess to be. Remedies applied to the soil have often been improperly recommended as effectual, because due regard has not been paid to the habits of the insects or to the time they require for coming to maturity.

Mr. Morden.—I may say with regard to the education of the crow, he starts out with a great deal of education, and his further education is easy. It will be found that the beetles do, as I say, get into the cracks and crevices of the ground in the day time. I have often found them there. It is quite likely they also hang on the leaves of trees, though I have not noticed that.

Mr. President Saunders.—Mr. Morden is quite correct, though he has not stated the whole circumstances. This insect changes in the ground from the larvæ to the crysalis, and from the crysalis to the beetle, and Mr. Morden found the insects there before they emerged. I have found them in the same way in the spring, before they put in an appearance above ground. But once they emerge, they never go back again, but thereafter their habit is to secrete themselves in the foliage of trees during the day time.

Mr. Read.—I have noticed that robins also are good at catching these grubs. If you look into your corn field early in the morning, you will find the robins there in force, picking the grubs out of the ground. Robins are the most useful birds we can have in the corn field. I have managed to drive away the white grub from my strawberries by scattering a little ashes on the ground when I plant the rows.

Mr. Geo. Leslie, of Toronto.—We have not been troubled for the last four or five years with the white grub. Before that time we had a great deal of trouble with it.

Mr. President Saunders.—How did you get rid of it?

Mr. Leslie.—It seemed to disappear of its own accord from the whole neighbourhood. I applied some of the refuse from the gas house to some of the strawberry beds, and it seemed to do some good. I found very few plants affected with the white grub afterwards. But I could hardly say that the experiment was satisfactory, because the white grub seemed to disappear from the whole neighbourhood.

Mr. President Saunders.—There is a small wasp that deposits its eggs in the bodies

of the grubs, and destroys a great many of them. It burrows in the ground after them just as industriously as the robin or the crow. Besides, they are liable to be attacked by a species of fungus, which grows out of the grubs, producing a very curious appearance. You will occasionally see a paragraph in the newspapers, describing a plant growing out of the body of a grub. Thus these destroyers are sometimes themselves destroyed by this vegetable parasite; and occasionally when they disappear from a district, their disappearance may be due to this cause, and not to any of the remedies applied.

THE PROFIT OF CHERRIES.

The next question was, "Can Cherries be Profitably Grown in this Province?"

Mr. Beall.—I proposed this question. I wish to know if cherries can be grown profitably, and if so, where? Any kind of a cherry would be very acceptable in my neighbourhood. We have tried to grow them, but invariably when the trees attain five or six inches in diameter, they die, and even while they live they produce very few cherries.

Mr. Leslie.—About Toronto we have placed the cherry in the same category as the peach. Some years we get a good crop, but it is never sure. The cherry is certainly not profitable with us.

Mr. Morden.—A good many varieties of cherries can be grown in the Niagara district. The slug that prevails in some eastern parts I have not noticed here. The common cherry can be produced here profitably, if our friends in Lindsay are willing to purchase them from us at a fair price. The ordinary Kentish cherry can also be produced in most seasons in this district in large quantities. One difficulty, however, stares us in the face. The cherry is a very perishable fruit, and perhaps it could not be shipped in good condition as far as Lindsay.

Mr. President Saunders.—Do you give the cherry any special treatment in this district?

Mr. Morden.—No, the ordinary treatment is extremely simple. I will give you the secret. It is to plant the trees along some fence, and let them grow with the burdocks and berry brambles and anything that comes along. My place is comparatively new, and I have planted them out in my orchard, and they are making a splendid growth. Whether or not they will bear large crops with that treatment I do not know, but I think they will. Mr. Biggar can testify to the profitableness of the cherry in this district.

Mr. Biggar.—I agree with all that Mr. Morden has said. Cherries grow very well with me in almost any kind of soil, and produce large crops. But the great trouble with the cherry is that just as soon as it begins to ripen nicely, it begins to rot, especially if there comes a rain. It is a fruit that does not keep long enough to bear shipment long distances.

Mr. President Saunders.—Do you find the crops of sweet cherries regular every year?

Mr. Biggar.—No, something like apples.

Mr. President Saunders.—Were they injured this year?

Mr. Biggar.—Yes, to a certain extent, but there was a very fair crop.

A Member.—What price do you get?

Mr. Biggar.—I think from eight to ten cents.

Mr. Hagaman.—The common red cherry succeeds very well with us, and I believe generally along the lake shore. But the English cherry on the north side of the lake is a failure. The trees are not hardy, and will not bear well. There is no money in the English cherry with us, and, but for the looks of the thing, I would take the axe and destroy the trees.

Mr. Roy.—We cannot grow a cherry around Owen Sound at all, except in exceptional cases.

Mr. Beadle.—I am afraid the difficulty with our friend at Lindsay is in his climate; and until he can devise some way to alter that climate, I don't think we shall be able to tell him how to grow cherries there. In severe climates, even the common cherry that

grows in our hedges here suffers to such an extent as to considerably impair its quantity. As to the profitableness of growing cherries here, I can only speak from observation. Sweet cherries in occasional seasons will bear well and ripen well, so that they can be picked and handled ; but if we happen to have a little shower, followed by warm weather, the sweet cherries are almost sure to rot more or less. The sour cherries, such as the Early Richmond, do not rot so quickly as the sweet cherries, although they do rot sometimes. I do not believe that the planting of cherry trees, with the view of raising fruit for market, is likely to be a profitable business in this neighbourhood—not at present, at all events. There are too many uncertainties. The whole crop may be injured by a fall of rain, particularly sweet cherries. The sour cherries are in growing demand. Perhaps we may yet have such a demand as will enable men with three crops out of five to make it pay ; but at present I would hesitate to advise men to plant cherry trees with a view to profit. I think they could make more money on the same ground with something else.

Mr. Beall.—I would like the Secretary to say more definitely what particular feature of our climate he objects to—the heat, the cold, or the moisture. I presume he refers to the cold. That cannot be an obstacle, for we find that in Norway this year, sixty and a-half degrees north latitude, where the thermometer goes down to forty degrees below zero sometimes, they grow the finest cherries in the world. I would like Mr. Beadle to say in what particular way the climate may be objectionable.

Mr. Beadle.—How do the trees behave in your section?

Mr. Beall.—The Kentish cherry grows well.

Mr. Beadle.—And blossoms?

Mr. Beall.—Yes.

Mr. Beadle.—Will it set fruit?

Mr. Beall.—It will not set much fruit.

Mr. Beadle.—Do you get something of a crop?

Mr. Beall.—No, not at all. The cherries fall off when they come to the size of peas. The slugs troubled me for a day or two very much, but not afterwards. We got rid of them with air-slacked lime. One gentleman spoke of furnishing us with cherries if we would pay the price. I am satisfied that he could sell plenty of them in Lindsay at from fifteen to twenty cents a quart if he would deliver them there. Many baskets of fruit, purporting to be cherries, have been sent there, and perhaps when shipped they were cherries, but when they arrived they were something else. We cannot get cherries here —cannot grow them or bring them in—and I would like to know why.

Mr. Beadle.—In the first place, I think the climate is to be blamed on account of the cold. A certain degree of cold occasionally occurs here, and will kill the flowering buds of even the Kentish cherry. There is a partial opening of the flowers, a struggling to blossom, and imperfect blooming, and no fruit sets. I do not know what the matter is. Whether an early wind may have blasted it, or a late frost killed it, I do not know.

Mr. Morden.—Perhaps a fungus.

Mr. Beadle.—That might be. One needs to see the trees from day to day to be able to judge. As to their growing cherries in Russia and Norway, that fact does not help us. They have a variety of cherry there that we have not got, though we may have it some day, but how well it will succeed here after we do get it, we do not yet know. There is this about it, however, it stands the cold very well there, and they grow large quantities of cherries, ship them to the cities, and sell them profitably. Mr. Beall alluded to another of the great difficulties of growing cherries for market, that is, the difficulty of shipping them any great distance with safety. Perhaps if they could be put in refrigerator cars, properly cooled and ventilated, the moulding of the fruit might be prevented, but shut up, as they usually are, in cars without ventilation and perhaps with too much heat, they are almost sure to mould before reaching their destination. The inventive genius of our American cousins has been set to work to devise fruit cars to transport these perishable fruits, and I believe they have one that is nearly perfect. When we get these in Canada, perhaps we shall be able to ship cherries to Lindsay. These are some of the difficulties at present in the way of growing cherries for market.

Mr. Hoag.—As the Secretary has referred to fruit cars, I may state that I have got up a car myself. It is used in the west and south-west, and for transporting fruit from

New Orleans to Chicago. During the hottest weather peaches are shipped in these cars to the north-west—to Minnesota and Iowa. The cars are furnished with ice, but are so constructed that the ice dries the atmosphere. There is a constant circulation kept up that absorbs the moisture in the car. We have never introduced these cars into this country, but into our own state and in the west. They have been tested in comparison with the refrigerator meat cars. In the latter salt is used on ice. This produces an intense cold, which does not answer fruit.

Mr. President Saunders.—My experience of trying to grow cherries in the neighbourhood of London is very much like that of Mr. Beall. In some seasons the Kentish cherry succeeds very well, and we sell it in the market at five or six cents a quart. But even it is scarcely to be relied on. The better varieties almost invariably fail. They usually blossom and set more or less fruit, but before the cherries attain the size of peas they drop. One has, therefore, seldom a chance of testing the better varieties of cherries in the neighbourhood of London. With me they have been very unprofitable indeed; in fact I have no profit whatever, but rather loss, considering the value of the trees and the ground they occupy. Still, I go on every year growing the trees, and live in hope of solving the problem some time as to how to get a crop; but thus far I have found no solution of the question why they fail every year, though I do not think the frosts are to blame. During the past year our Kentish cherry trees have suffered from a trouble from which they have been comparatively free hitherto, viz., black knot. In a short space it was easy to find from fifty to a hundred specimens. In fact, some of the trees appear to have the black knot on almost every branch—especially those of the Kentish variety. These black knots, on being cut open, appear to have larvæ in them, which look like the larvæ of the curculio, but of that I am not certain. I do not think, however, that the action of the black knot is due to the larvæ being in them. Black knot is a species of fungus, that on the cherry has been regarded as distinct from that on the plum: but recent investigations have satisfied botanists that they are the same species, modified a little on account of the difference in the character of the tree they occupy. So that, where the black knot on the plum is common, we are very apt to find the black knot on the cherry also common. There is no remedy for it that I am aware of, except cutting the affected branches off and burning the vegetable growth.

Mr. Beall.—I cannot accept Mr. Beadle's remarks about the cold as correct, for this reason: I know a certain place about six miles north of Oshawa, where, for the last forty years, cherries have been grown abundantly until five or six years ago, and there is no evidence that our seasons are any more severe now than they were up to that time. Why they could grow in former years and cannot now, I do not know; but I am satisfied the cold is not the cause. Now, however, they cannot grow a single cherry on the place.

Mr. Croil.—I can substantiate Mr. Beall's remarks wholly. Six years ago, although the thermometer went fifteen, twenty, and sometimes thirty degrees below zero, we had plenty of cherries. For the last few years we have not had any.

Mr. Wright.—I have succeeded in growing cherry-trees to a certain extent, and in the spring of the year they will bloom sometimes, but they never bear fruit. This year, however, a gentleman in our neighbourhood, who has had cherry-trees growing for six years, did have a pretty fair crop. I have tried to protect the trees with peastraw, but the cold is so intense that it kills them.

Mr. Gott—I am sorry to say that our experience is a little worse even than yours, Mr. President, in London; for we not only lose the fruit, but the trees also, especially if they are grown on a rich, luxurious spot of earth. Sometimes they will do better on a high, hard soil, than they will on a low, fertile soil. This is the case especially with the sweet varieties—those known as the Heart and Bigarreau cherries. Our only hope of cherries rests in the native, or old red kind. They appear to do a little better than the others, but this year they also have been a failure. It is very lamentable to see these beautiful trees growing ten, or fifteen, or twenty feet high, and then dropping down. A sort of fungus seems to attack them and kill them. Cherry growing is a very discouraging industry with us, although the demands for the fruit are enormous.

Mr. Allan.—In our section we do not grow cherries for the market to any extent. As a rule, we supply the local market only, for which we had a sufficient supply this

year. The May Duke was our finest crop this year. The only variety I noticed to suffer from the rot was the Elton. The Kentish cherry yields us a pretty fair crop. As Mr. Gott suggests, we find that the cherry does better to be neglected a little, rather than to be cultivated, and fed, and tended carefully. Those who grow the largest crops, grow them on the outlying ground, where they receive very little attention. The chief trouble we experience comes from the robin, which is there in thousands, though we have not been visited by the cherry bird; and the moment the cherries are ended, the robin leaves.

Mr. President Saunders.—I think it is very important that we should get the cherry that succeeds so well in Russia, the Vladimir, or some other variety that is adapted to the colder districts. While some who live along the lake shore, about Goderich, and on the Niagara peninsula, seem to get all the cherries they require, we, who inhabit the northern parts of the Province, have to go without them. I am glad to say that we are getting a supply of the Vladimir, and will perhaps have them next spring.

Dr. Cross, of St. Catharines.—We have a great deal of trouble with our cherries. Nearly three-fourths of them rotted before they were ripe. The May Duke is the best. The Kentish is not much better than the sweet cherries. I have not seen black knot on the cherry trees for many years.

Mr. Dempsey.—Cherries are not cultivated to any great extent in the district to which I belong. In every effort to cultivate the tender varieties, we have been accustomed to failure. The climate seems to be rather severe for their culture, but some of the Kentish varieties are succeeding very nicely in the vicinity of Trenton. There were heavy crops this year, and the grower received very good prices. The Early Richmond seems to be all we can desire. It is one of the most profitable fruits, I think, that we can cultivate. I wish it to be understood that I am speaking of the rolling lands in the vicinity of Trenton. There are some favoured spots there which have not suffered from a failure in the hardy varieties for seven years. The only remedy I know of for robins, and other birds, is to grow plenty of cherries. If a man has a hundred cherry trees, the product of one or two trees will be sufficient to feed the birds; and with that number of trees bearing, he will not miss what the birds eat. The same remarks will apply to the cultivation of all fruits. We have had some trouble with the black knot, but we find that when persons have been cautious enough to remove it as soon as it appears, they have had no difficulty from it whatever. I am inclined to think that cherry culture is going to be one of our most profitable industries in the fruit line. But we must grow the Early Richmond or some such hardy variety.

LOCAL ASSOCIATIONS.

The next question for discussion was "The Desirability of Establishing Local Associations in every fruit growing neighbourhood."

Mr. Gott, being requested to open the discussion, said: I am a little sorry you have called upon me to introduce a question of this kind. It is a question beset with difficulties, and requires very mature consideration. I would prefer, therefore, that it should be left over to be decided by a larger meeting. My own opinion is that the plans for such local associations are as yet immature. I had intended to correspond with some friends across the line, especially in Michigan, as to their mode of conducting their branch horticultural societies. I thought the matter over a little last winter, but had not the opportunity to investigate it thoroughly, and failed to get up a plan that would be reliable. For these reasons, I would still demur, and say, allow the question to stand over for still further consideration. In the meantime, between now and next winter, we may be able to obtain some information as to the working of such societies, by which we may be able to form a plan which will be satisfactory, and will promote the interests of this Association. The whole object ought to be to extend the usefulness of the Association, to bring it to the doors of those who know little or nothing about it. We have sometimes heard of people being surprised to learn that there is such an institution as the

Ontario Fruit Growers' Association. This should not be so; and the object of these branch societies should be to extend the knowledge of this Association and its objects, so that it will be unknown to nobody who has a small plot of ground to cultivate. If we fail to do this for the people of this country, we fail to do our duty. For these reasons, I would ask that the question be left over to next winter's meeting.

Mr. Morden.—I second that motion.

Mr. Wright.—I think it expressly desirable that some action should be taken—perhaps not at this meeting, but at some future time—on this subject. My reasons are these. In the first place, we all know that fruit growing is wholly different from any other agricultural pursuit. The same methods pursued in this county for the growing of wheat, or barley, will answer in the county of Renfrew; but we cannot grow the same varieties of fruit in one county as in another. The Province of Ontario is very large, and embraces very great variety of climate, and it is necessary that the people of each locality should know the kinds of fruit they can grow with success. The varieties you grow here it is almost impossible for us to grow. If we had a local association which would prepare annual reports, and get up a fruit list suitable to its locality, it would be of great advantage; and if we had a number of these associations which would communicate with the central Association, we might have fruit lists for every county in the Province. We think of forming such an association in our county, and any information we can obtain to assist us, we shall receive gladly. Fruit growing is in its infancy in our section, and we need all the information we can get.

Mr. Morden.—It appears to me to be quite in order for Mr. Wright and his friends to form an association in their county, and as soon as arrangements exist for affiliation, they can affiliate. In my locality we have had an Association for years. It consists of twenty or twenty-five members, and is chiefly concerned with our business interests. Our people do not indulge as much as they ought in discussions, with a view to information regarding fruits and fruit growing; yet, our Association has been productive of a great deal of good in promoting a friendly feeling among the neighbours, though we are rivals of each other in business. We meet in each other's houses for the discussion of questions of mutual interest to us.

Mr. Wright.—Is it an independent association, or is it affiliated with the Agricultural Association?

Mr. Morden.—It is entirely independent of any other association. I think the need of some such association is constantly felt in every small fruit growing district. I should like to see similar associations established at St. Catharines, Grimsby, Jordan, Oakville, etc., with some sort of connection between them, so that they might act in concert. Our little association at Drummondville has headed a very important agitation—that is, for a central fruit market in Toronto, where the fruit may be received for sale. The agitation has been taken up by the Toronto papers also. In that agitation, however, we laboured under a great disadvantage, as we only represented one little locality. I think affiliated Fruit Growers' Associations throughout the entire Province are very greatly needed. The great majority of fruit growers will never attend these meetings, but they would attend the county meetings, and would derive much benefit from them.

Mr. Wright.—I would like to ask, in case an association were formed in the county of Renfrew, and we got up an annual report, whether that could be sent in and published in connection with the proceedings of the Provincial Association.

Mr. President Saunders.—No doubt the Directors would be glad to get all the reports they could from these outlying associations. In the Entomological Society we have branches of this kind, the members of which become members of the society by paying half the amount of their fees, and are entitled to all the society's publications, reserving the other half for their own use. I do not know whether or not a similar arrangement would work well in this Association, but some plan can, no doubt, be devised to encourage these local associations, and I think we can all see the importance of such being organised, and can anticipate the benefits of fruit growing generally, if each district, by that means, learned of its wants and reported them to the central body. The Directors would then be in a position to make an intelligent effort to meet the wants of the various districts in the Province. It is a very important subject, and would bear further discus-

sion, but perhaps we had better vote on the motion to defer it to the winter meeting, devoting ourselves in the meantime to gathering all the information we can with reference to it.

Mr. Dempsey.—I have been observing the working of similar associations across the lines, and it appears to me that we should look at this question as one of loss and gain. What would we gain by establishing local associations? It is true, in the State of Michigan they work admirably—a State inhabited by a very enterprising people, and whose fruit growers rather excel those of any other section of country. Our neighbours in the State of New York are also succeeding very well with their branch societies, or rather in receiving reports from the different counties, though they are not conducted in the same way as those in Michigan. In Missouri, Wisconsin, and other western States, we find the same condition of affairs. But when we compare our Association with any of these, either as to its workings or its list of membership, we shall find that the people of our own little Province of Ontario, who have not the name of being a very enterprising people, have no reason to be ashamed of the comparison, and that we are treading upon dangerous ground when we propose to change our present system. With about 2,600 members at present, and this number increasing at the rate of about 700 a year, we have no reason to complain. We should be satisfied with the progress we are making. I have seen some of the difficulties of working local societies. I have tried to work with three different county horticultural societies. My experience of all such attempts is that they are a failure. They have sometimes been revived, and failed again; so that when we undertake to establish local societies, although a year ago I was favourable to them, I fear now that we are treading on dangerous ground. Local or branch societies could be formed, however, without interfering with us; and they could enjoy every advantage we have to offer if they saw fit to give us a dollar for every member they have, and thereby made him a member of the Fruit Growers' Association. In this way they might be an advantage all round.

Mr. Wright.—Our idea was that every member of our Association should give us a dollar, and that that dollar should be forwarded to the Fruit Growers' Association, the only condition being that our annual report should be forwarded and incorporated in the Report of the Fruit Growers' Association. It is a long distance to come all the way from Renfrew to this meeting, and if we could get all the advantages of the Association without coming so far, we should be greatly benefited.

Mr. Allan.—The only solution of this question that I see is to give a little more work to each Director. We have a horticultural society at Goderich, the Vice-president has one at Owen Sound, and there is another at Stratford. At one time we had a good deal of enthusiasm displayed in our society; we used to hold monthly meetings for discussion and the reading of papers, but it ultimately died out completely. At Stratford they thought their society was going to live for ever, but it had precisely the same experience as ours. They could not keep it up, and I believe it fizzled out completely. The only feasible plan that I can think of is for the directors of each district, upon the same principle as the Fruit Growers' Association, to travel through their district, and hold meetings at different points for the purpose of taking evidence from the fruit growers, and from that to compile a report to be delivered to the Fruit Growers' Association.

Mr. E. Ashley Smith.—I have been exceedingly impressed in the discussion of this topic, and I agree very much with the remarks of my friend, Mr. Dempsey, in reference to the danger of weakening the parent society by the establishment of branches. The value of these associations depends very much, I think, on the purpose we have before us in establishing such an association. You have here a large, influential, and valuable association. Through its publications and its large membership it diffuses intelligence and wields its influence over a very large district of territory. But the danger of the local branches is that their tendency may be to diminish the usefulness of the parent society by substituting the local associations for it. If we can make the local associations simply instrumental for spreading and enlarging the Provincial Association, just so far as they operate in that direction, they will be a benefit. But my experience and observation of similar associations on the other side, have tended to show that the moment we began to rely upon our district associations, that very moment we began to lose ground, for the

reason that the men who compose these associations are not, as a rule, men of large practical experience with regard to fruit growing or agriculture, so that their discussions are not of a character of permanent interest and benefit. But a body like the present one, where men of intelligence and large practical experience from all parts of the Province come together to communicate their views to each other, cannot fail to be of great practical service to everybody connected with it. I was never more impressed with this than I was at a meeting of our Association held at Rochester a year ago last January. A great many subjects of interest were discussed, one of which was the culture of the peach. Some of our best orchards were attacked with the disease which is spreading far and wide throughout the whole of western New York, and the whole peach growing industry in our district looks as if it were threatened with extinction unless some remedy is brought forward to relieve us. There were at that meeting reports from I think five different gentlemen who had been experimenting with the view of arresting that destructive disease, the yellows. Among them were two chemists, one from the State of New York and one from the State of Michigan, who advanced their theory as to the cause of the disease. Those reports agreed in recommending the use of a liberal amount of quicklime around the base of the diseased peach trees—from three to five bushels of lime to each tree. The testimony was that in no case had this remedy failed to arrest the progress of the disease, but that in most cases it had succeeded in saving trees that were well-nigh gone. The theory advanced by the chemists was that the disease was caused by a superabundance of starch in the tree that obstructed the flow of the sap, and the action of the lime when taken into the tree, was to set free the superabundance of starch, and to restore again the healthy circulation which the disease had interrupted. This I give as an illustration of what I said before. If that be a true remedy, of what infinite value would it have been to the fruit growers of western New York had they known it several years before. It was something of which they had no means of knowing except through their connection with an association where they had the advantage of the experience of others on this as on every other important question relating to fruit growing.

Mr. Wright.—I should not wish anyone here to imagine for a moment that I would do anything tending against the interests of this Provincial Association; but I had thought that, if we formed local associations in our country, which would contribute to the funds and the membership of this Association in return for the annual report and the *Horticulturist*, no harm would be done. Even though the members of the local association should never attend the meetings of this body, you would have their money and you would increase your membership, and by that means you might be enabled to increase the size of your little monthly paper, which is constantly growing better. All this appeared to me to make the local association an advantage to this one; but if it should be a disadvantage, of course I should have nothing to do with it.

Mr. Roy.—I have had some little experience of local societies, both agricultural and horticultural. We had a great deal of trouble to get even eighty members for the agricultural and fifty members for the horticultural society. I have thought of suggesting the idea of endeavouring to secure the affiliation of all the horticultural societies in Ontario with this Association. I am afraid, however, that the formation of county branches of this Association would entail considerably more expense than we could afford, to say nothing of the additional trouble that would be caused to the directors. I think if every member of the present board, thirteen in number, throughout the Province of Ontario, would use his influence to secure members by explaining the good this Society is doing, such an effort would be far more beneficial than anything that could be done through affiliated societies. Instead of 2,600 members, we ought to have at least 10,000. If we set forth the fact that this Society gives every one of its members the value of $3 for every dollar received from him, I think that result would soon be attained.

Mr. Morden.—I would not pay the doctor a cent for bringing into being these societies, and if they died, I would not give anything towards their funeral expenses. If their birth costs nothing, and their death costs nothing, and they cost nothing while they live, why, let them live.

Mr. Roy.—I believe every member of the Horticultural Society of Owen Sound is a member of this Association, without exception.

Mr. Dempsey.—I wish only to make a suggestion—that we should try the experiment, the coming winter, of inducing some of our local horticultural societies or agricultural societies to call meetings, at which one or more of our Directors might attend, for local discussions. By this means, we might feel our way as to how far this project could be made a success. I believe we could have a dozen or more local meetings in this way during the winter; but, I would not think for a moment of doing away with our regular meetings that we have, where men representing the whole Province meet for the exchange of their views. I know that what I learn at these meetings more than pays me for all the time and expense involved in attending them.

Mr. President Saunders.—I do not think there is any intention, whatever, on the part of Mr. Wright or anybody else to interfere with the meetings of our Association; and, it appears to me, he and his friends ought to be encouraged in every possible way in their effort to establish a local association for the purpose, really, of sending members to our Association. All they ask is, that they should have the privilege, which I am sure the Directors would be only too happy to grant, of having published in our Annual Report any little report they may make with reference to the fruits of their particular district. I would advise Mr. Wright to go on and form his association.

Mr. Wright.—We are going to do it.

Mr. President Saunders.—He has informed us that it will be no expense to us, and I can see no objection to the formation of such associations there or elsewhere. The idea of limiting this work to the Directors is very good, as far as it goes; but, in Mr. Wright's district we have no director, and we should be glad to have the fruit growers, in this or any other district, unite for the promotion of the interest we all have at heart; and the Association will be only too glad to publish the results learned in any section, no matter where it may be. I think I speak the sentiment of the Board.

Mr. Coot.—It appears to me, that the easiest way to advance the interest of this Association, is for every member to be urged to act as an agent to obtain members and subscribers to the *Horticulturist*. There are a great many men interested in the fruit growing industry who only require to be asked to become subscribers.

Mr. Roy.—I think it would be a good thing to publish the names of all the members in our Annual Report; such a course would create an increased interest in the Association.

Mr. Wright.—I think that is an excellent suggestion. I have been very anxious to find out if there were other members here from the northern districts, and I have been unable to do so.

It was then agreed to defer the further consideration of this subject to the next winter meeting.

GRAPE CULTURE.

The next subject for discussion was the Culture of the Grape, embraced by the following questions:—"What is the Best Way to Prune and Trellis Grapes?" "How to Cover or Prepare Grape Vines for Winter." "The culture needed."

Mr. Gott.—We have now before us a very interesting question. With regard to the culture of the grape, I think we are pretty generally agreed, the vines should be planted on rich soil, well and thoroughly drained, and should receive the best tillage or culture. They should be planted in rows about eight or ten feet apart, and the same distance apart in the rows. They may be trellised east and west, or north and south, but north and south is considered the preferable way, because in that way, the vines receive the sunshine both from the east and the west. The trellises may be made by posts being put in the ground at certain distances apart; in some cases the posts are planted the same distance apart as the vines; in other cases, one post is planted for two vines. The next thing to do is to stretch wires—number nine, I believe—on the posts. The usual height of the posts is from five to seven feet. The vines are trained on the wires and fastened to them, either by means of strings or by some kind of metal suitable for the purpose. After the cane has grown a considerable distance, it is pinched back to stop its further growth. It then throws outside shoots, which are also pinched back. The vines should be pruned to

a certain extent in the summer, although some, who have neglected to prune in the summer, say their results are surprisingly fine. With the respect of laying down or not laying down the vines, it is a question of profit or loss. We maintain that the profits are considerably increased by laying down; it is something like the question of stabling your horse or allowing him to run at random; he is better stabled and taken care of. With respect to covering, I prefer a light covering for the grape. If there is much covering of earth on the young cane as laid down in the winter, it is liable to rot; if it is covered by brush or other light material to keep it down, it receives sufficient protection from the falling snow. The more we study the grape, the more we are astonished at its importance and value. Many parts of this country are well adapted to grape growing, and on the whole, the prospects of this luscious fruit are admirable.

Mr. Morden.—I will take the liberty of offering a few criticisms. With regard to laying down in large vineyards it is almost impossible, and has not been, and never will be practised in this part of the country; and I doubt that, even if feasible, it would be desirable. We do occasionally lose grape vines; we lost them largely last winter, and we would have lost them as largely if we had laid them down. The difficulty with grape vines is not in the cane, but in the root; but we find that in nine years out of ten the grape vines do not suffer in the winter at all, so I fail to see the necessity of laying down. I also fail to see the necessity of summer pinching back, and practically, it will never be done in large vineyards, except to facilitate getting at the vines. In the matter of trellising, my neighbours have a little device which is very useful; they use the posts and the wires—perhaps sometimes number eight instead of number nine wire—they bore a hole through the post, pass the wire through it, and fasten the wire to a small round piece of wood five or six inches long, around which it can be wound until it is sufficienty tense. The piece of wood can then be fastened by a small piece of iron being stuck through it, so that it cannot revolve backwards again; and in the winter, if it is desired to slacken the wire, this can be done. This is a very convenient device, enabling you to tighten or slacken the wire at will. With regard to pruning grapes, that is almost a business in itself. I do not profess to know much about it; but I am learning all the time, and I think no man can stand up here and explain to a novice how to prune grapes. It is something you require to go out into the vineyard to explain, with plenty of illustrations at hand. We have to adopt a different plan altogether in pruning grapes from what we apply to fruit trees. In fruit trees, ordinarly, it is good policy to avoid cutting out much of the wood from the tree. The grape vine, however, sends out great shoots each year, and the policy generally pursued, is to get rid of the old wood. When the vine is three or four years old, get rid of as much of the old wood as you can, and rely on the younger wood for your fruit. When you do not desire a long shoot, cut off one or two buds; make a short spur with one or two buds on it. This pruning is done generally in the late winter or early spring, and that spur sends out a strong, vigorous growth as soon as the spring opens, and upon that young growth the fruit is set. If you have a great expanse of old vine, you fail to get a large supply of good fruit. I would like to warn those who are novices in grape culture against some of those fine-spun methods, such as the Fuller method, which is both troublesome and expensive, and which is suitable only to a small garden with a few vines. If you put a grape vine through the course required by that method, in a few years I believe your vine will fail. Some method of dealing with them that is more rough and ready will be found to be the most profitable in the long run; nor do I believe in a great quantity of wire; I do not think we should go beyond three wires, at any rate, for the trellis. As to the culture needed, my own practice is to follow clean culture, but I have known gentlemen who refused to cultivate except early in the season, who allowed the weeds to grow, and in the autumn had magnificient crops of grapes. With regard to diseases, mildew is a very serious matter with anything that has foreign blood in it. I have frequent visits from Italians, one of whom suggested the use of sulphur as a remedy for mildew. As we use the sulphur in this country, however, we get very little good from it. If we knew just when the mildew was about to come, and then made a liberal application of sulphur, we might save our crops; but we wait until the disease is upon us, and then it is perhaps too late. Some of my neighbours who ought to get twenty or thirty tons this year, will not get a hundred pounds, owing to the ravages of

the Rose Beetle. This pest comes along at the time the grape is coming into leaf and blossom, and cuts the blossom completely off, in some cases destroying the entire crop ; but it acts somewhat locally. Although entire vineyards are destroyed within half-a-mile of me, they have done me no harm at all this year.

Mr. Roy.—Do you prune in the fall or the early spring ?

Mr. Morden.—Both ; and I am not aware that the result is very different.

Mr. Roy.—And do you do any pruning in summer at all ?

Mr. Morden.—Not at all, except perhaps as a matter of convenience for picking.

Mr. E. Ashley Smith.—This subject of trellising the grape is one of vital interest to the grape grower, as it very materially affects the question of profit and loss. It has for a long time been a study among the planters of vineyards to learn how most economically to trellis their vines so as to bring about the best results with the least money and the least outlay of labour. There are a great many methods, all of which have good points, many of which have poor points, and none of which are perfection ; but the question is, which comes nearest to perfection in those points that are desirable in the plant of vineyardists. I have travelled about a great deal during the last year or two in sections where grapes have been cultivated largely for years, and I have in my mind a system which is being largely adopted in preference to every other. It is called the Kniffen system, which takes its name from the man who perfected it. It originated with another man, who, however, failed to demonstrate its value to such an extent as to bring it prominently before the public. Mr. Kniffen, who lived in the same neighbourhood, and who saw the advantages of the system, took it up and developed it to such an extent in his own district in Ulster county, on the Hudson river, that it has not only been generally adopted there, but has extended to New Jersey, Delaware, and other States. In describing this Kniffen system, I will take first the trellis. Large substantial posts are driven into the ground until they are six feet above the ground, and are placed from forty to fifty feet apart, and smaller intermediate posts, three or three and a-half inches in diameter, are placed between the large posts. On these posts the wires are strung, only two wires number ten size, the first three and a-half feet above the ground, and the other at the top of the posts, that is, two and a-half feet higher up. The vines are planted ten feet apart each way, but the posts are not set at every hill. In its first season's growth, the vine is freed from all laterals, so that the cane gets a vigorous growth, and is brought up in the first year as far as the first wire. The second year's growth commences from that point. The vine is again trained to a single cane, is carried up to the second wire, and turned on it. This system being so regular and uniform, makes a vineyard, when once thoroughly established, look very beautiful. When the vine reaches the proper height, its laterals can be trained along the two wires, so that each vine has four arms, two on each side. Thus you have your vine in the second season, and then comes your pruning. It is a difficult matter to know where to prune in a vineyard. Under most systems, especially the Fuller system or the hap-hazard system, it really requires a professional man to prune a vineyard, and do it well. The usual method adopted under the Kniffen system, after you have your vine established in the first year, is to prune back to six buds. Leave each arm with six buds to the third year. You should not undertake to grow another crop among your vines. If you would have them succeed, you must give them plenty of room, and not allow them to be crippled in their growth by other crops growing about them. Give them good care, and you will get your crop of fruit from them in the third year The next year when you come to prune, you will have a strong vine, and you should leave eight buds instead of six. The system of pruning under this system is one of renewal. You are always cutting away the old vines and bringing up the new laterals to take their places, so that your vine is renewed every year. The advantages of this system are numerous. You have economy in using only two wires ; you have economy in the amount of growth required to be cared for. You have the advantage of no tying, for there is none done the whole season. The growth of the vine is very graceful. The new growth throws out branches, which can be trained to drop on each side of the trellis, like willows. This is an advantage both in the development of your fruit and in the facility of gathering it. There is a free circulation of air through the vines, as well as an exposure to sunshine, which greatly aids the development of the

fruit. If you want to thin out your fruit, you can take the best bunches and leave the rest. There are some varieties of grapes, like the Concord or the Niagara, which are very strong growers, and make a very strong wood. I refer to the Niagara, for the reason of what I am about to illustrate—that where a vine makes a very strong growth of cane, the fruit buds that form on these heavy, strong arms are not to be relied on for fruit. The laterals that grow out, and the growth of wood, seem to take from the strength of these buds. I suppose that can be remedied by pinching in, to stop the growth where it seems necessary to curtail it. In that case, when you come to prune, all you have to do is to depend upon the laterals. We ascertained that, in the management of our grapes, by the merest accident. We had a vine making a strong large growth, which we had not trained on this system, and where we relied on the strong wood we did not get our fruit, but where the laterals were left we got abundance of fruit. Sulphur has been referred to as a remedy for mildew. That is adopted very largely on the other side, where the Concord, the Rogers' and the Hartford varieties are grown. In the Western States they do a great deal of covering. I asked a gentleman from the west what their system of covering was. He said that when the vines were planted on a slope, they managed to train them one way, so that they could easily lay them down. Another method was to bring all the vines down on one wire, and wrap some straw around them. The theory is that the straw and vines together afford a resting place for the snow, which furnishes a protection during the winter. My experience is that clean culture shows the best results. The testimony of fruit growers in the grape growing districts is that wood ashes and pure ground bones to the extent of perhaps twenty-five or thirty bushels of the former, and 250 or 300 pounds of the latter to the acre each year, are the best fertilizers that can be adopted.

Mr. Gott.—I am sure we must all feel ourselves deeply indebted to the gentleman who has presented us with the ideas he has just done, with respect to grapes and their culture. Even in the system he has explained, so simple and so effective as it appears to be, there is a certain amount of management, of care, of skill required; and for that reason, we demur to some observations made this morning which seemed to be in favour of allowing grapes to grow hap-hazard as they please. It appears that in this system there is a little pruning required, and the testimony has been given to us that the vines are improved by a certain amount of care and pruning. We think the subject of pruning depends upon certain scientific principles that can be understood, and to say that no man can explain the pruning of grapes so that it can be understood, is, we think, a little wild. Another remark made this morning about laying down, we would like to demur to—that is, whether we laid them down or not, we were liable to lose the vines, simply because they were killed at the root. I have to say to that, that a vineyard should not be planted on ground where the vines are liable to be killed at the root. If planted on high, dry, properly drained ground, they will not be killed at the root. If vines are killed at the root, it is the fault either of the ground or the grower.

Mr. Morden.—I wish to introduce a resolution that will only interrupt this discussion a little, with regard to vines being killed at the root. I will just say that where that has occurred the land is perhaps the most perfectly drained on this continent, and the killing at the root did not arise from any lack of drainage. It is moved by myself, seconded by Mr. Roy, That the special thanks of this Association are due to Mr. E. Ashley Smith, of Lockport, N.Y., for his lucid description of the Kniffen system of pruning grapes, as practised in Ulster county, N.Y. I simply introduce this resolution because Mr. Smith is a visitor, and not one of ourselves.

The resolution was unanimously adopted.

Mr. E. Ashley Smith.—You are entitled, fellow fruit-growers, to my thanks for this recognition. It only gives me great pleasure, at a meeting like this, to contribute something in my feeble way, which may benefit my fellow fruit-growers. I never attend a meeting of this sort without gathering a great amount of information that is valuable to me, and I have done so here. I can go away from it with the consciousness of having received from you more than I have contributed.

Mr. J. B. Grey, of St. Catharines, then read the following paper (which had been prepared for the press) by Mr. Blair, of Louth, on Grape Trellising :—

GRAPE TRELLISING.

Having been requested by a number of my friends to publish a description of my grape trellis, and state some of the advantages which it possesses over the ordinary one, I would, for this purpose, ask a small space in your valuable paper. Before proceeding to this task I will give the reasons of my devising the method of trellising now in use on my farm. Three years ago last spring I laid out about four acres for a vineyard, and when the time arrived for trellising the vines I had considerable difficulty in procuring posts. I went first to the lumber yards in town, but could find none to suit; then to the farmers in the neighbourhood, but the price asked was from fifteen to twenty cents a piece, a sum which I was unwilling to give, as the profits realized from raising grapes would scarcely admit of this expenditure. And, having learned by experience that wooden posts last only from twelve to fifteen years, even when well protected by a coat of tar, I concluded to construct a trellis largely composed of iron, which would be less expensive than wood and much more durable.

My vines are planted exactly ten feet apart each way. At each alternate vine an iron post, five-eighths of a inch square, is driven into the ground about two feet, and so arranged that the posts in the alternate rows are directly in a line crosswise. These posts, which stand six feet above the surface, are so made that a wire can be securely and simply fastened at the top. When the posts are all in position, I stretch a wire lengthwise and crosswise, fastening it strongly at the top of each post, and where the wires cross, just above the vines not supplied with an iron post, I drive a wooden stake, one and a-half inches square, close to the vine, and, with a small staple, fasten both wires to the upper end. Around the whole vineyard, I place a strong wooden post, at the end of each row, for the purpose of fastening the wires, and also for protecting the vines from being damaged by the cultivator, and the trellis from being injured by high winds. The first heavy canes I keep tied to the posts and stakes as they grow, and in the spring, when they are of sufficient height, I spread them out and fasten them to the wires attached to the post from the four sides. By this means the vines grow straight and regular, presenting a much more attractive appearnce than when trained in the usual way.

The advantages of this trellis are :—

1st. Its durability. A trellis constructed of the material, and in the manner already described, will last much longer than any wooden structure. Of course the small wooden posts are perishable, but these, which cost only two cents each, can be taken out and replaced at any time without doing the least injury to the grapery.

2nd. It is simple in construction. There are no holes to dig, no measurements to make. The post is set with a plumb-line and driven home with a few taps of a mallet, the operator using a step-ladder. I, with the help of a small boy, in less than one day, last spring trellised an acre of vineyard, besides carrying the material from the shop to the field.

3rd. It allows the vineyard to be thoroughly cultivated by horse power. It can be ploughed and double cultivated lengthwise and crosswise, and a single cultivator can be run through it in six different ways, thus doing away with the necessity of hoeing except about a foot around each vine. This one advantage not only secures the complete cultivation of the ground, but also is a saving of at least five dollars an acre each season. None but those who have experienced the hard labour of hoeing a breadth of two feet the whole length of each row in the hot days of summer can fully appreciate this saving of labour.

4th. Each vine, each cane, and almost every leaf, gets its share of the dews, showers, air and sun. In the ordinary system, the upper leaves form a row of umbrellas which sheild the dews and rains from the under ones, while my plan permits moisture to be dropped from the upper to the lower leaves until it is deposited at the root of the vine, thus every part of the plant receives its share of nourishment which nature provides.

5th. It affords clear egress for cattle. In my old grapery I have frequently found

a stray horse or cow, and, in getting the animal out, much damage was done. The dog's attention being called to the intruder, he attacks it generally at the head; the animal wheels round, runs through the vines, tears down the trellis, and injures large quantities of fruit. The damage thus done often requires a day's labour for repairs, leaving the loss of fruit out of the question, besides, such occurrences frequently engender much ill feeling between neighbours. But in the system recommended all these annoyances can be avoided, as, whichever way the animal turns, he has a clear way to run without any possibility of injuring the vineyard.

6th. The foliage is not affected by the early frosts. I observe that the first frosts blacken the foliage of my old grapery, which is trellised in the usual way, but have no perceptible effect on the new, and certainly any method, by which the green appearance of a vineyard can be preserved until late in autumn, is to be preferred. At first I was at a loss to understand how this could be accounted for, but on thinking over the matter I concluded that it was owing to the air having free passage through the whole grapery, and, by keeping the leaves constantly agitated, they were not blighted by our first frosts.

7th. It is pleasing to the eye. While the grape is beautiful in whatever way it is grown, yet when trained in this way it is doubly so. The long avenues of green foliage, the pendant clusters of fruit, the regularity of the trained vines—all present one of the most pleasing rural sights that the eye can rest upon.

8th. It is easily manufactured. Anyone possessed with any mechanical skill, and provided with a small shop and a few tools, can make this trellis during the winter months, and have it all ready to put up as soon as the frost leaves the ground. I completed enough to trellis four acres in one month, besides doing the ordinary work in connection with a small farm in winter.

9th. It can be used for other purposes. Should the culture of grapes become unprofitable, should the climate so change that they cannot be raised, or should the fruit grower make up his mind to devote his attention to something else, the posts can be taken up and made into harrow teeth, or sold for old iron.

The objections against this method of trellising are two, viz: the expense and the liability of the lower end of the post rusting off.

1st. The expense. A ton of iron will cost $45. This is sufficient to trellis 400 vines. The manufacture of the iron into posts will cost $16 additional, wooden stakes $4, making the cost for every two vines thirty-two and a-half cents. Compare this with a wooden structure and it will be found, taking into account the digging of post-holes, that the trellising of every two vines will cost in the neighbourhood of thirty-four cents. So the objection of expense does not in reality exist.

2nd objection. With regard to the rusting of the lower end, I have the opinion of practical men that, with the coating which I give them, the posts will resist the attack of rust for a life time, besides I have ocular evidence on this matter. In the house in which I live a lightning-rod, three-eighths of an inch square, was placed upon it about fifty years ago, with one end in the ground, and it is there yet, and will last fifty years longer from present appearances. But, allowing that it should rust away eighteen inches, or two feet, below the surface, it can be easily taken up in the fall, a new piece welded on during the winter, and again put up in the spring as good as new, at an expense of about ten cents for each post.

I am not in a position to prove that this method of trellising will increase the quantity of fruit, but from the canes that bore last season I feel convinced that it will. All the different varieties grown in my new vineyard have thus far matured their fruit splendidly and perfectly free from mildew.

JOHN BLAIR, Louth.

On motion, the paper was referred to the Printing Committee.

MR. E. ASHLEY SMITH.—I may say that I visited Mr. Blair's vineyard last week, and was much pleased with it. His system is entirely new to me. The inexpensiveness and durability of the trellis, and the easiness and readiness with which it can be repaired,

particularly commended it to me. As he says, there is an iron post for every vine. The intermediate vine is provided for by a little sawn stake about one and a-quarter inch square, stuck eight or nine inches in the ground. The bottom of this, as also of the iron post, is coated with gas-tar or something of that sort, and the wires at the top of these posts are fastened by a little staple. At the iron post, there are two iron pins to which the wire is fastened.

Mr. Read—I saw Mr. Blair's trellis directly after it was erected. As to its practical working, I can say nothing; but from appearances it is splendid.

EXCURSION TO NIAGARA FALLS.

At this point, on motion of Mr. Croil, seconded by Mr. Dempsey, a vote of thanks was unanimously passed to Mr. Morden for his efforts in providing the members with an excursion to Niagara Falls.

Mr. R. B. Werden, of St. Catharines, made a few remarks, in which he contended that no particular system of cultivating the grape would suit all localities, with their different soils and different climates. Vines wanted protection; but, on the other hand, there was danger of giving them too much protection. They must all do the best they could in their respective localities.

Mr. Morden.—My friend's remarks remind me of an important announcement. Probably all gentlemen here are not aware that our American cousins have taken the duties off fruits, and that now all our fruits pass into the United States free of duty. This occurred on the first of July. No doubt, when we meet after dinner, some gentleman will be prepared to make a motion to reciprocate in this country.

Mr. Roy.—When I attended the annual meeting of the Mississippi Valley Horticultural Society, at New Orleans, Mr. Parker Earle, the President of that Society, very strongly advocated free trade in fruits between the United States and Canada.

The meeting then adjourned till two o'clock in the afternoon. On resuming,

GRAPE TRELLISING *(continued)*

Mr. Dempsey said—The system we adopted for training grapes in former years, was simply to plant posts, and to string several wires from post to post, forming a trellis in this way; and we invariably practised the renewal system. We have changed that plan, and now we place the posts twenty-four feet apart, and string two wires upon them—one five feet, and the other two and a-half feet from the ground—and we train one branch from the lower wire and one from the upper wire, and the branches, as they grow, simply hang over. We find that the laterals make much less growth when the branches are hanging down than when they are trained upwards. In this way, we save a great deal of pinching and stopping, and we are not bothered with so much wood as we were under the former system. We find also that this simple trellising lessens the expense materially, as we save both on wires and on posts. In pruning, we practise the renewal system. Every person understands, I think, that grapes are very much finer and more abundant from last year's wood, than from older wood. So, in pruning, we simply endeavour to save this year's wood for next year's fruiting.

Mr. Robert N. Ball.—The gentleman who opened this discussion said the covering of grapes was injurious to the buds. I have not found it so, and I know some who grow the very finest varieties cover them without injury.

Mr. Dempsey.—In our climate, which is very severe, it is necessary for us to cover our grapes every year with straw. I have known buds to rot from the heat when covered with manure.

Mr. Read.—Nearly every variety of grape needs a different mode of pruning. The Concord is a great grower, and if you cut it short, as is done in Europe, it will break out about the base. Our American grapes will not stand this pruning. Therefore we have to study the needs of the different varieties, and we shall find that they need different treatment. I have known foreign varieties to be covered with advantage.

RESOLUTIONS OF CONDOLENCE.

MR. ALLAN.—I have a couple of resolutions to bring before the meeting, seconded by Mr. A. A. Wright. The first is as follows:—

Resolved, That the members of this Association deeply deplore the loss they have sustained in the recent death of Mr. Charles Arnold, of Paris, one of our oldest and most active members, and for many years one of our directors. During his long life he laboured with great industry to advance the interests of fruit culture in this country, and by his efforts to improve our fruits and grain by cross fertilization and otherwise, has, while benefiting his own Province, gained a world-wide reputation. He was ever ready to impart to any who might seek it all the information in his power, and has greatly aided our Association by his sound, practical wisdom, the outcome of his long experience. While recognizing our loss, we desire to tender his widow and bereaved family our sincere sympathies, and to assure them that his memory will be cherished by us.

MR. PRESIDENT SAUNDERS, in putting the resolution to the meeting, said: Most of you remember our old and respected friend, Mr. Arnold, who laboured with us for many years, and must have learned of his removal with deep regret. This resolution will, I am sure, commend itself to us all.

The resolution was carried unanimously by a standing vote.

MR. ALLAN.—The other resolution is as follows:

Resolved, That the Fruit Growers' Association of Ontario have learned with deep regret of the death of Dr. John A. Warder, of North Bend, Ohio, a gentleman who has perhaps done more than any other man to advance the interests of forestry on this continent. The papers he has presented during late years to this Association have been highly appreciated and much valued. We have long admired his practical method of dealing with the various subjects he treated, and his wonderful powers of observation, which enabled him to accumulate the vast stores of knowledge, from which he was ever ready to draw for the benefit of others. We beg to tender our sympathies to his widow and family in their deep affliction.

MR. PRESIDENT SAUNDERS.—Death has been busy in our ranks during the past year, removing from our midst one of the most prominent men on this side of the line, and one of the most prominent on the other. Many of you who were at our winter meeting the year before last will remember a very interesting paper sent to us by Dr. Warder, on the subject of suitable trees for shade and forest purposes. He was very active in the department of forestry, and it will be very difficult to fill his place. He was very suddenly taken away during the past year, and this resolution, I am sure, expresses the views of every member present.

The resolution was carried unanimously.

EARLY PEACHES.

The question, "Which are the most Profitable Varieties of Early Peaches for market?" was then taken up for discussion.

MR. READ.—The early peaches are very difficult to handle, as they are tender and subject to rot. The Beatrice and Early Rivers are my favourites. When others fail, these varieties flourish and produce an abundant crop.

MR. ARMSTRONG, of St. Catharines.—My opinion is that the Alexander is the most profitable peach we can grow, and I believe in a few years it will be the only peach we can grow in this district, on account of the bug—I do not call it the yellows. I do not believe in the yellows. I have found that it is a bug which attacks our peach trees. I have tried the different varieties of peaches, and I have found the Alexander in all points the most satisfactory.

Mr. Ball.—I heard Mr. Read recommend the Beatrice. We do not want any Beatrice with us. They are too small and do not fill up very well. I would not give a toss between the Early Canada and the Alexander. I think it would require an expert to tell the difference between them. The Early Canada has a much more rapid growth in the leaf. The Alexander has a smooth leaf, while the Early Canada has a rough leaf, but they are equally good growers in our section.

Mr. Gott.—Our experience in early peaches is not large. The varieties we are acquainted with are the Early Alexander, the Early Canada, and Amsden's June. These, although possessing separate names, seem to us in nature and quality about identical. They ripen early, are very showy, and are a very desirable fruit; and this season it so happens that the crop of these varieties is larger than that of almost any other variety we have. The Early Hale, though not new, is a very promising variety that we cannot very well do without. It is good in quality, and comes immediately after the very early varieties. Then some of Mr. Rivers' early varieties are very desirable. The Early Rivers and the Early Louise may be mentioned specially, but the former seems to us to be the best of the whole list of early peaches. It is excellent in quality and a good shipper, especially if taken a little on the hard side, and it commands a good price in almost any market. The next we have is the Early Crawford, and other early varieties of that class, which are not at the present time fit for market. We are glad to see that the bill is so well filled with regard to early peaches, and we think these early varieties should be encouraged in this country. The difficulty with these, as with all early fruits, is that if they approach ripeness, they are unfit for shipping.

Mr. Ball.—The Barnard is a very good early peach. There is some confusion between the Honest John and the Barnard, and I would like to have that made clear.

Mr. A. M. Smith.—The Honest John ripens a little before the Crawford, while the Barnard does not ripen till after the Crawford.

Mr. Gott.—Will you please describe the Honest John?

Mr. A. M. Smith.—The large, fully-grown Honest John you would take for small Early Crawford, but it is generally a little more highly coloured.

Mr. Beadle.—Is your Honest John a yellow flesh peach?

Mr. A. M. Smith.—The Honest John, as grown in New York, is a yellow flesh peach, but as grown in New Jersey and Delaware, I believe it is a white flesh peach. As regards profit, of course the varieties that ripen first are the most profitable. There is not much to choose between Early Canada, Alexander, and Amsden's June. Succeeding these is the Early Beatrice, which is very good for shipping, looks well, and sells well for a small peach. But when you come to eat it, there is not much of it. It is mostly pit and skin. Of all the early peaches I am acquainted with, I think I would select the Early Rivers. It is a very fine peach of very good size, the only objection to it being that it is a little tender for shipping. The old Hale's Early is a very valuable peach too. It comes in just about the time you have not anything else, and in a dry season, if it does not rot badly, is a very profitable peach.

Mr. Ball.—It does not rot so badly on clay as it does on sandy soil.

Mr. Allan.—In my district the bill is filled when I mention the Alexander, Hale's Early, and Early Crawford. The late peaches we do not grow to any extent. We have tried the Beatrice, but it is too small for profit in our market.

Mr. Armstrong.—I agree with the last speaker entirely, and I wish to state that the question before us is profit. I have this season shipped some of the varieties mentioned by gentlemen here to-day. The Early Beatrice I find too tender for a shipper. It is a finer flavoured peach than the Alexander, but the Alexander is the most profitable.

Mr. Coots.—I have tried the Alexander and the Waterloo at Dundas. They both ripened about the same time. The best sample I got from the Alexander measured seven and a-quarter inches, and the Waterloo about seven and a-half inches. I could see very little difference between them, but of course this is the first crop. I have also three trees of the Early Rivers, a beautiful peach, now ripe, but, as Mr. Armstrong says, it is very tender and very soft, but about a week or ten days later in ripening than the others. I also have a tree of Early Canada, which is a more showy peach than any of the others, but five or six days later in ripening.

Mr. Allan Moyer, of Jordan.—Is the Waterloo peach a free-stone?

Mr. Coots.—No, though I do not think it clings so badly when ripe as some of the others. It is a fine looking peach, and the tree is a very healthy grower.

Mr. Hiram Goodwin, of Thorold.—I had a splendid crop of Early Rivers, which I picked in the excessive heat, and shipped to Montreal. I shipped them on Monday, and they arrived at their destination on Thursday. I received notice that those most forward wasted a little. Had I picked them in season they would, I presume, have been all right. This peach, however, has one fault with me—it almost always splits in the pit. I have shipped the Alexander with great success; it is an excellent peach. The Early Beatrice I have also had, but it is small. The Early Louise is a great grower, but is also small. The Early York is very fine with me this season; it is just now ready for picking; I think a great deal of it. I would like to know from those experienced in growing the Early Rivers whether they are troubled in the same way as I am—with the splitting of the pit.

Mr. A. M. Smith.—I have noticed that in the Rivers, but I think I have also noticed it quite as bad on the Crawfords in some seasons. I do not know how to account for it exactly, but you generally find it where the trees are healthy, and the peaches show a fine growth.

Mr. Goodwin.—My trees are healthy, but the ground has not been cultivated this season.

EARLY APPLES.

The question, "What Varieties of Early Apples Have Been Found to be Profitable Market Sorts?" was then discussed.

Dr. Cross, of St. Catharines.—One kind of early apple, the Early Harvest, is comparatively useless now. The best early apple I know of is the Red Astrachan. The Duchess of Oldenburg is a very profitable early apple.

Mr. Goodwin.—I have grown a good many varieties of apples, and for an early apple I prefer the Red Astrachan. I have other early kinds but they are inferior in both size and quality.

Mr. James Hill, of Campden.—The Red Astrachan, the Duchess of Oldenburg, and the Keswick Codlin, I consider the best three in the order named.

Mr. Werden.—My experience favours the Duchess of Oldenburg.

Mr. Gott.—Of early apples for market, the earliest and perhaps the best is the Early Harvest, or Sour Bough. It is good also for family use, and what is good for family use will usually be found valuable for market. The Red Astrachan and the White Astrachan are both excellent varieties. The Duchess of Oldenburg, following immediately after, is a very desirable apple. But before that we have been trying an original variety called the Tetofsky. It is a beautiful fruit. It looks almost like wax, with a beautiful blush on one side. It is a good cooking apple, and is also admirable for dessert.

Mr. Roy.—The Red Astrachan, the Early Harvest, and the Keswick Codlin all grow very heavily with me; but if you leave the Astrachan on the tree until it is fully ripe, it will not keep more than four or five days.

Mr. President Saunders.—I owe to the members a word of explanation at this point. Some important business at home obliges me to leave by the next train, which I regret very much, as I would like to have been with you to the close of the meeting. But Mr. Roy fills the chair well, and I would ask him to take my place.

Mr. Roy then took the chair.

Mr. J. S. Wismer, of Jordan.—The Red Astrachan is a very nice apple, but for cooking, the Duchess of Oldenburg is preferred to it, as it is too soft. The Yellow Harvest apple is in my opinion preferable to the Red Astrachan.

Mr. Beadle.—I have grave doubts whether in this part of the country we can grow the Yellow Harvest profitably. It is a very nice apple when we can get it, but it is very apt to spot. I have seen it badly covered with a black fungus, which we call black spot. I have seen entire crops ruined by that troublesome fungus, and it comes so frequently

here that I am afraid anybody planting Early Harvest trees with a view to profit will be disappointed. There is less risk with the Red Astrachan, or the Duchess of Oldenburg; but I think the Red Astrachan should be marketed before there is any danger of the Duchess of Oldenburg interfering with it. The Duchess of Oldenburg is a very marketable apple. I remember a few years ago shipping some to Montreal, when they were not so plentiful as they are now, and received $5 a barrel for them.

Mr. Armstrong.—My experience of early apples is simply this, that we have not an early sort that is really a fine variety. The Early Harvest is the best early apple we can raise in this country, and next to that the Red Astrachan. But to my mind neither of these is so satisfactory as some that come later.

Mr. James Hill.—This season I have not seen an Early Harvest apple that was fit to eat. I have seen a number of trees that were blighted, and there was not a sound apple upon them.

Mr. J. P. Williams, of Bloomfield, P. E. County.—I have had some experience in growing early fruit. I have tried a number of varieties, and have reduced them down to three. As a cooking apple, I cannot very well dispense with the Red Astrachan, as it comes in earlier than the Duchess. I have had very good crops of both this year. As a table variety, I cannot dispense with the Primate, which is ahead of all for the table. The Yellow Harvest, year after year, is so spotted as to be perfectly valueless. The Tetofsky is too small and not a good cooker; I prefer the Duchess of Oldenburg. But the Grand Sultan, as a cooker, is ahead of anything else; it is the finest cooker I have grown.

Mr. Beadle.—I was quite surprised to hear Mr. Williams' remark about the Primate. In some parts of the country it is tender, and will not bear the climate. It might do well enough in Prince Edward County, which is almost surrounded by water, which modifies the climate, but I should think it would not succeed at Lindsay. It is a delicious apple, but I do not like to talk much about it outside of the Niagara district.

Mr. Moyer.—I agree, that the Early Harvest and the Primate are good eating apples, and I would not like to do without them; but for profit, it seems to me we have nothing better than the Red Astrachan and the Duchess of Oldenburg. The Duchess is a fine coloured apple, an enormous bearer, and a good shipper. This year I sent some to Montreal where they sold at $4 a barrel, although they were not as nice as in former years, and I did not cull them very much. I would class the Red Astrachan and the Duchess of Oldenburg as the two most profitable varieties.

Mr. Dempsey.—I have grown a few early apples, but when you speak of dessert, we never find room for apples as dessert at this season of the year. We have generally berries of all descriptions and early pears at that season for dessert, so that I think we have to look at the apple principally as a cooking fruit, and I think we could dispense with some that are known as table varieties. The Primate is a good apple, though with us it does not bear heavily, and sometimes we think the tree is a little tender. I think that we might safely replace the Red Astrachan with the Grand Sultan. It is a good shipper and is a little earlier than the Red Astrachan. I have been very unfortunate in shipping the Red Astrachan. It will not do to risk it on more than a twenty-four hour's journey, and buyers are afraid of it, because it fails so quickly. For my part I have been terribly disappointed in that variety. The Duchess of Oldenburg is a splendid shipper, and pays well in the market, before it is fully grown. Last year a gentleman shipped 200 barrels of this variety to Montreal where they were sold at an average of $4 per barrel, and this was before our Red Astrachans were ready for shipping. If we want a table apple coming a little after the Duchess, there is nothing I know of better than the Prenyea, which was originated in our county. It is a yellow apple, with a slight blush on the cheek, and has a fine flavour. The Ceilini is an English red apple—a very superior variety. You may have seen it at the Provincial Exhibition, where it won a prize. It has a nice form, is a good table or cooking apple, is very productive, and the tree seems to be hardy with us. Even this year, unfavourable as it has been to apples, the trees are loaded. My experience has taught me not to go too far in the cultivation of early apples, as the market is often liable to be overstocked.

Mr. Geo. Camp, of St. Catharines.—I can only say that I have found early apples pay better than late ones; but, as the gentleman who has just spoken says, the market is

limited, as early apples come at the same time as peaches and other fruits. We have the Early Harvest and the Summer Rose. The latter comes in a few days earlier than the Early Harvest, and is, I think, a better paying apple. We have also the Duchess of Oldenburg, which is an A 1 apple, and a very profitable one. The Red Astrachan I do not like. I like an apple that I can pick in at least two pickings; the Astrachan you may keep picking for two weeks. For shipping it is almost useless with me, and it is spotted and small. My land is light, sandy land. That is all I can say on summer apples.

Mr. Williams.—It is one of the drawbacks of the Astrachan that it ripens unevenly. Two years ago I gathered my crop from time to time for a month. The Chenango Strawberry I find a very fine flavoured apple, and a good cooking apple.

Mr. Allan.—The Red Astrachan and the Duchess of Oldenburg, I believe, for actual profit, now rule our local and other markets. As Mr. Dempsey says, there is not sufficient demand to warrant the growth of an early table apple, so many fruits coming in at that season which are superior to eating apples.

The Report of the Committee on the Fruits and Flowers on Exhibition was then read by the Secretary as follows:—

REPORT OF THE COMMITTEE ON FRUITS NOW ON EXHIBITION.

Mr. Gott, of Arkona, exhibits Red Astrachan, Duchess of Oldenburg and Tetofsky apples as well as Hales' Early peach.

Plates of Tetofsky, Red Astrachan and Duchess of Oldenburg apples were shown by Thos. Beall, of Lindsay.

Mr. John Hay, also of Lindsay, shows samples of Red Astrachan apples.

There were also fair specimens of Grand Sultan, Duchess of Oldenburg, Benoni and Red Astrachan, produced by John P. Williams, of Bloomfield.

The sample of Hales Early peach and Red Astrachan apples shown by A. Moyer, of Jordan Station, were also very fair.

Mr. S. Overholt, of the same place, produced good specimens of Hales' Early peach and of the Lawton blackberry.

Your Committee also find two plates of Clapp's Favourite pears—very fine specimens—and shown by ———

The samples of Hales' Early peach shown by Mr. A. H. Pettit, of Grimsby, are very superior specimens, highly coloured, which show the peculiar adaptability of his soil and climate for the growing of this delicious fruit.

There were very good specimens of a yellow seedling plum, grown by John Arris, of Belleville, on exhibition by Mr. P. C. Dempsey. They are of excellent quality and worthy of extensive trial. Mr. Dempsey's collection also contains plates of Osband's Summer, Rostiezer and Manning's Elizabeth pears, as well as a plate of Grand Sultan apples.

Mr. Biggar, of Drummondville, shows a General Hand plum, which he placed on the table for name.

The small red seedling plum shown by Mr. F. Goring, of Homer, is apparently very good for cooking purposes.

A plate of Jessica grapes, shown by Mr. D. W. Beadle, of St. Catharines, was found to be very early and of excellent quality, and likely to be a valuable acquisition to our list of White Grapes, and is considered to be well worthy of extensive trial. A plate of Champions, grown on the same grounds, shows upon comparison the Jessica to be fully as early a grape as that early variety.

Fine specimens of the Niagara grape were shown by Mr. Hoag, of Lockport. They were thoroughly ripe, in fine condition, and having been grown in Virginia, and sent via New York to Lockport and then here, demonstrating their admirable shipping qualities—they having thus travelled over 1,000 miles.

Their characteristics having been so often reported upon, your Committee do not deem it necessary to refer to them here.

Mr. Hoag also shows good specimens of the Ott pear, not fully ripe, apparently of good quality; very sweet but of small size.

In addition to the above a most creditable and excellent display of fruits, flowers and ornamental shrubs, was made by Messrs. Beadle & Dunlop, of St. Catharines. The varieties of pears included Sarah, Doyenné du Comice, Doyenné Boussock, Josephine de Malines, Rutter, Souvenir du Congres, and Stevens' Genesee. Of apples there were fine specimens of Mother, Waupaca, Sutton's Early, and another variety much resembling Falla water. There were also two varieties of Egg Plant, viz., the New York Improved and Early Purple, both remarkably fine specimens.

The display of shrubs included, Yucca filamentosa or Adams' Needle, Tamarix Indica, Salsiburia or Maiden Hair Tree, the Purple-leaved Plum, Althæa or Rose of Sharon, variegated Althæa, the Hydrangea aniculata, the purple Peach, purple Birch, purple Maple, purple Berberry and purple Hazel, the variegated Wigela, the variegated Sycamore, Fern-leaved Sumac, the Curl-leaved Willow, Mohonia-aqua-folia, Imperial cut-leaved Alder, Catalpa and the Amorphophallus Rivieri. In climbers there were the Clematis, Jackmani and Coccinea.

There was also an excellent display of Gladioli, which embraced almost every variety of shade and colour. Their display of Dahlias was remarkably fine, embracing about fifty varieties. There was as well a very fine display of these flowers from the grounds of Messrs. Webster Brothers, of Hamilton, it embraced also about fifty varieties, some as large as even Oscar Wild would desire, and others no larger than a penny.

All of which are respectfully submitted,

C. M. Honsberger.

The report was referred to the Committee on Printing.

GOOSEBERRIES.

"Are Gooseberries a Profitable Fruit to Cultivate?" was the next question discussed.

Mr. Ball.—I do not raise gooseberries, but a good many are raised in my neighbourhood, and the impression there is that they are not a profitable fruit. They were sold at fifty cents the twelve-quart basket in Toronto, and did not pay at that price.

Mr. Roy.—Are they subject to mildew?

Mr. Ball.—Not much; some. We live near the lake, and I think that has some influence on them.

Mr. Read.—I find very little mildew on gooseberries. I have some growing very successfully this year, but I have none to sell, though, from the prospects, I should say they would be profitable, as they bear heavily.

Mr. Dempsey.—I am satisfied that gooseberry culture can be made profitable. It actually is made profitable by some persons in our Province. A gentleman told me since I came here—I am sorry that I do not see him present—that he had sold his gooseberries this year at twelve and a-half cents a quart in the district. He also told me that his plants produced half a bushel each, and that they were planted six feet by four. You have only to make a little calculation to see that that would pay pretty well: it would beat strawberries a long way, without costing half the time to care for them. He managed to get these high prices by leaving his gooseberries until the strawberries and raspberries were nearly over, when he was only about a week selling them. This summer they have been selling at various prices up to twenty cents a basket. The way they were prepared for market was to separate the large ones from the small ones, by means of a perforated zinc, the former being sold at a higher rate than the latter. I fancy that we could so improve the varieties of gooseberries, both in size and flavour, as to make them a very profitable fruit to grow.

Mr. Croil.—I cannot say that gooseberries in our neighbourhood have been profitable, but I do not see why they should not be profitable. The great difficulty with us has been mildew. A gooseberry bush will not occupy more space than a cabbage, and I do not think Mr. Dempsey has overstated the fact when he says that one bush will yield half a bushel. The price this year in Montreal was, I think, on the average, ten cents a quart. We grow the Houghton. We had no mildew this year. The Downing is an excellent berry, a heavy bearer, very fine for eating, but not for cooking; it is too sweet for that. One advantage the gooseberry possesses over the other fruit is the advantage with which it is gathered. If you cannot pick the berries to-day, you can do so the next day or the following. On the whole, I think gooseberries are a very profitable fruit to cultivate.

Mr. Dempsey.—In Montreal, where we ship all our goosebeeries, this year the Houghtons averaged about six cents a basket, Smith's Improved averaged about eight cents a basket, and the Downing averaged about ten cents. That is, for the season through.

Mr. Croil.—One kind I did not mention is the Red Captain, which is spoken of very highly as a very large berry, a good bearer, and free from mildew.

Mr. Roy.—Had you any mildew this year, Mr. Dempsey?

Mr. Dempsey.—Yes, we had abundance of it. Houghton's Seedling and Smith's Improved mildewed, but the Downing did not mildew at all. On those varieties which were attacked by mildew, however, there was still some fruit to be obtained. We treat the bushes attacked by mildew with sulphur, but this year the sulphur has not apparently had any effect. We have not had sunshine enough to cause the sulphurous acid to rise from the sulphur, and consequently it has had no effect on the mildew.

Mr. Goodwin.—I think we can grow gooseberriss profitably. About twelve or fourteen quarts is the largest quantity I have ever received from a single bush. This year I realized six cents a quart for that quantity. I have four varieties growing in my grounds—the Downing, the Houghton Seedling, Smith's Improved, and another whose name I forget. I have never been troubled with mildew. Even at the low price of six cents a quart, gooseberries can be raised at a considerable profit to the grower—in fact, I would say at considerably less than that.

Mr. Roy.—What kind of manure do you use?

Mr. Goodwin.—My orchard is young. I have manured it simply with good barnyard manure, well rotted; but the principal fertilizer is ashes. I give the bushes a very small amount in the spring.

Mr. Roy.—Do you throw any salt on the bush?

Mr. Goodwin.—I never use salt.

Mr. Williams.—Are you troubled with the worm?

Mr. Goodwin.—Yes, I have been this year. I use white hellebore successfully to get rid of it. I just shake a little of it dry on the bushes in the morning.

Mr. Wright.—We do not grow the gooseberry very extensively in our neighbourhood The Houghton and the Downing are the two principal varieties I have grown—for my own use.

Mr. Armstrong.—I think the only trouble with regard to the gooseberry is the picking of them. If the grower lives near a city or village where he can obtain help, I believe they may be made a profitable crop; but not otherwise.

BLACKBERRIES.

"Can any varieties of Blackberry be Profitably Grown for market?" was then opened for discussion.

Mr. Gott.—I would most decidedly answer, Yes. We believe they can be profitably grown for market—indeed, the market is very anxious to get them. Amongst all the berries on the list, this is one of the most delusive in texture and flavour. There are a number of varieties that we think can be made profitable, among which we would name the Dorchester, the Lawton, and the Kittatinny.

Mr. Roy.—What do you think of Wilson's Early?

Mr. Gott.—It is not profitable, inasmuch as it is very tender and a poor bearer. One of the best varieties on the list is the Snyder. It is a very fine fruit, and will yield an enormous number of quarts or bushels to the acre. In our markets, blackberries will command twenty-five cents per box. It is a high price, but people will pay it, and the supply is inadequate to the demand.

Mr. Morris.—I think the Snyder and the Taylor's Prolific are the only two I can rely upon. The Lawton, the Dorchester, and the Kittatinny are tender. In the Niagara district I do not think we can depend on more than one crop in three. When the blackberries do bear, they bear wonderfully, and are very fine and very profitable. But, on the whole, from my experience—which has been considerable—I can hardly think they pay. One objection to the Snyder is in its size; but it is so extremely hardy that when planted in rich soil and well cultivated it will produce abundantly. I would recommend it in preference to the others.

Mr. Gott.—We know that blackberries are indigenous to this country, and to prevent tenderness the practice of pinching is adopted. When the cane comes up three feet or so it is pinched off, and that causes an enormous growth. A number of shoots start out from the stalk, forming a bush, or almost a tree. When these come up a little above the former growth, they are also pinched; and so this pinching process goes on. The bush then goes into winter quarters, perfectly hardened; the frost has little or no effect on it: and even the Kittatinny, which has been complained of as tender, will come through the winter with sureness and success. When this practice is followed, complaints about tenderness in such hardy fruits as blackberries are not applicable to our country. We do not like to hear them.

Mr. Morris.—The training spoken of by Mr. Gott is not common in the Niagara district, but I deny that it makes the blackberries any hardier. I cannot see why it should; the varieties I referred to are naturally tender, and there is no way in which you can make them hardy unless it is by growing them in rather dry and warm soil, where they do not get much growth. But in that way you would get very little fruit.

Mr. Hilborn.—I find that the success of any variety depends a good deal on the location and soil. What will do in one locality will not do as well in another, either as to hardiness or productiveness. Taylor's Prolific has been mentioned as hardy. We have had it for two years without its giving any indication of bearing. We have not gathered one quart of fruit from Taylor's Prolific, while we have gathered hundreds from the Snyder, and a few from the Kittatinny. The soil is a clay loam.

Mr. Honsberger.—In this country there is scarcely any variety of blackberries for which we fear winter-killing. At least, on my place the only variety which appears to be at all tender is Wilson's Early; I have no difficulty in growing the Kittatinny, the Lawton, or the Dorchester to perfection. If allowed to grow as they would, they would grow to a colossal size. I think blackberries have paid me better than any fruit I have grown in an equal space of ground, yielding large crops of fruit, not only one year in three, but every year; and always bringing good prices in the market, frequently averaging fourteen or fifteen cents a box.

Mr. Gregory.—I think there is a great deal in the locality and the soil. The Early Wilson has been standing on my place for thirteen years, and not more than a bush or two at a time has been winter-killed. I believe that on sandy soil near Lake Ontario all the varieties spoken of—the Kittatinny, Wilson's Early, and the Lawton—are hardy enough; and I believe trimming does make them a little more hardy. As for profit, I am certain they will produce a great deal more than our wheat fields have done this year.

Mr. Roy.—The Kittatinny and Wilson's Early I find very tender. I have pitched on the native berry that I get out of the woods, and it bears every year. There is nothing tender about it.

Mr. Goodwin.—I think the soil has a great deal to do with successful blackberry culture. Taylor's Prolific, even with rough treatment, has never failed to give me a good fair crop, and this year the bushes are loaded down almost to the ground. The Lawton and the Kittatinny have utterly failed with me in the winter, but Taylor's Prolific seems to have stood every winter, and I am so well pleased with it that I intend to increase the growth.

Mr. Coots.—I have got this blackberry fever a little. Our friend, Mr. Gott, says they bring twenty-five cents a basket; and in the last number of the *Fruit Recorder*, page 146, I find a statement by a gentleman that on a piece of ground eleven rods by ten, he has picked this present year from a patch planted in 1878, no less than 5,643 boxes of Snyder's, which at twenty-five cents a box, would produce in the neighbourhood of $1400. I think that is ahead of black currants. I intend to take up my black currant bushes and plant Snyder's, or Taylor's Prolific, or Dorchester, or something else in blackberries.

Mr. Hilborn.—There are some localities where Taylor's Prolific does very well, but I think on the whole the Snyder is the hardiest and most prolific we have, and it is likely to be planted most generally for market purposes and for canning.

Mr. Goodwin.—There is a new variety called the Gainer Seedling, which is one of the finest blackberries that ever came under my notice. My neighbours have brought it successfully through several winters, and it bears exceedingly well.

BLACK KNOT AND THE CANADA THISTLE.

Mr. Drury.—I desire, with your leave, to bring before this meeting a matter which I consider to be of great importance to us as fruit growers. It has reference to the existing laws relating to black knot and the Canada thistle. We do not want to change the laws, but we want some better machinery than we have for carrying them into effect. I think you will all bear testimony to the truth of what I say when I assert that although the law on the subject of black knot is a good one, it is virtually a dead letter. I have brought up this matter because the Agricultural and Arts Association, of which I am a member, propose discussing the question of better machinery for putting into force the Canada Thistle Act, and I hold that it is the duty of this Association to co-operate with the Agricultural and Arts Association to have the laws against this and other pests, carried out. Anyone going over the country at this time of the year, as most of us have done, will be impressed with the lamentable fact that the Act relating to Canada thistles is an utter failure. There is no pretence to carry it into effect. Even in our public highways the Canada thistle thrives. In ninety-nine cases out of a hundred, I believe the overseers of highways neglect to have it cut down. One reason why the Agricultural and Arts Association purpose to bring this matter before the country is, that in many parts of the Province new weeds are making their appearance. In the northern parts of the Province, the Ox-eye Daisy has shown itself. Many like it because it is a pretty flower, and the ladies sometimes wear it; but few are aware of the danger of that little flower. Some say that it is even worse than the Canada thistle. So far as the Canada thistle is concerned, I am sorry to have to make the admission that to put in force the law against it would be, I believe, to destroy a great portion of the crops of the Province. But now is the time to put into operation the machinery of the law against the Ox-eye Daisy, the Wild Mustard, and other weeds, which are just beginning to appear, and from which many parts of the Province are as yet free. We want the law extended so as to cover all these destructive weeds. I hold that it is the duty of this Association to place their views before the Legislature on questions of this kind. We have not so large or so special an interest in these weeds as we have in black knot, and with regard to that we should give the Legislature the benefit of our advice. We purpose, if possible, to have this matter brought before the public during the next session of the Legislature, with the view of having some better machinery adopted. The trouble at present is that a man does not like to inform upon his neighbour, and it appears to me that the only method by which the law can be carried out is to appoint township inspectors. At present, if I see my neighbour allowing thistles to go to seed, I, as a good citizen, am expected to see that the law is put in force; but if I do not wish to be an informer, the result is that the Canada thistle goes on extending, and the trouble grows worse. I hold that the time has come when we should take some more practical steps to cope with this evil; and in connection with this, our special duty as a fruit association is to see that the law against

black knot is made equally effective. The gentleman who originated that law—a very good one—lives at Owen Sound, and yet even there it is a dead letter. Why? Simply because there is no one to put it into force. I desire that this meeting should give expression to the opinion, if it so thinks, that public officials should be appointed to see that these laws are put in force.

Mr. Roy.—This is a very important subject which Mr. Drury has brought before us, and I hope that all who feel an interest in it will give an expression of opinion on the subject. I did a good deal in order to get the Black Knot Act passed, and I am sorry to say it has not succeeded as I anticipated. I do not think the black knot can be exterminated by cutting it out. I tried to cut it out for four or five years, but year after year it reappeared in the same branches, until 1880, when it came out worse than ever. In the spring of 1881, again there was scarcely a branch in my orchard that was not affected with black knot. In the fall of 1882, I was so vexed that I had nearly thirty trees chopped down. I saw that there was no help for it, as there was not a sound branch in them. If you pass a stringent law, I very much fear that it will necessitate the destruction of many plum orchards. As to the Canada thistle, I have passed scores of fields more thickly grown with it than with oats. No farmer is able to keep down Canada thistles on his farm. On the public highways, too, I never saw the thistles so thick as they are now, and the overseers of highways pay no attention to them.

Mr. Gott.—I am very glad Mr. Drury has brought this important matter before us, and if anything can be done to render these laws more effective, I think most decidedly it ought to be done. In the western part of the Province the black knot is sweeping the orchards. There is scarcely a plum tree to be found that is unaffected by it; and that is not the worst. It is extending to our cherry trees, so that in the course of time they will fare as badly as the plum trees. If anything can be done to stay this progressive destruction we would like to have it done.

Mr. Drury.—Being a matter that requires research, I think it would be desirable to place this subject in the hands of a committee. I, therefore, move that the President, Vice-President and the Secretary, be a committee to enquire into the present law respecting black knot, as well as the Canada Thistle Act, and to report to the annual meeting any suggestion to improve the carrying out the intent of these laws.

Mr. Dempsey seconded the motion.

Mr. Drury.—I may say that the Legislature naturally look to this and kindred associations for direction in these matters, about which they cannot be expected to have the same knowledge as men who are specially interested in them.

The motion was carried.

After passing votes of thanks to the Warden and County Council of Lincoln for the use of the Court House for this meeting, and to the various railways for reduced fares the meeting adjourned.

The following Papers were handed in for publication in the Annual Report:—

REPORT ON FRUIT FOR 1883 FOR THE COUNTY OF LAMBTON

Gentlemen of the Fruit Growers' Association:

The year that we are now living—1883—has been, up to the present, a very peculiar one, and memorable in the annals of fruit, as well as those of storms and accidents. During the whole of the months of May, June, and July we had one continued succession of unsettled weather and furious storms. Our lands became so thoroughly saturated with water and washed that all degrees of plant life were almost surfeited, and much injury ensued. During the whole of this period, too, the temperature was unusually low and depressing—the lowest we have remembered for years, and we almost despaired of ever having our usual summer heat to dry up the ground or to warm up languishing nature. We grew tired of the monotony, for the wet and cold, cold and wet, continued up into our harvest

time, and despair was filling the hearts of the community. But, now that a change has taken place, we are likely to suffer from the other extreme; for the ground was beat and soddened to such a state of hardness that all surface crops will be speedily dried up. Birds have been very plentiful, and so also have the insects of all usual, and some unusual, kinds; and many leaf-eaters seem to be much on the increase amongst us. The spring was late and backward, and early vegetation moved late and slowly. But, when the fruit-blossoms did appear, the show was very fine indeed, especially of peaches, which was the best we have had for three years, and promised an abundant harvest. But, after the gay scenery was over, the sad effects of continued cold and wet became painfully and seriously apparent. Much of our tender small fruit was badly damaged, as strawberries and raspberries; and the injury was still worse upon our grapes. Fungus and mildew are very apparent upon the leaves and upon the fruit of not only grapes, but also upon many other fruits, our wheat not escaping. Our early foliage was the most singularly beautiful that I ever saw: the largest, the finest, and the healthiest. But this pleasant state of things soon changed, and the tender leaves of our apples, peaches, plums, and cherries soon became curled and fungus-smitten. The strawberry crop was medium, but suffered much from wet and weeds, as the cultivators could not be got on the ground, and in many cases we could barely pick them; and when they were picked the fruit was almost worthless from wet and dirt. We began to feel the force of a truth, we are fast learning, "that fruit growing, on the whole, is

A PRECARIOUS BUSINESS."

The raspberry crop was much injured, even to a third or one-half the crop. This was done by the showery weather filling the opening tender blossoms with wet, and just afterwards the hot sunshine heating the water, scalded the tender germs, and they died. We picked our first ripe raspberries July 10th.

The gooseberry and currant crops were very light indeed, and the fruit of the currant was not good; but that of the gooseberry was rather improved, a wet season suiting it best. Grapes bloomed July 1st, but the setting is the poorest one we have had for years —indeed scarcely a good full bunch is to be found on the trellises. Rot and mildew is now feeding upon them, and our share will be "poor indeed." With the single exception of Clintons, our crop of grapes will be the lightest we have had for many years.

Peaches, especially seedlings bloomed most abundantly, and have set well; but the best yellow varieties will be very scarce. Of the very early sorts, we picked our first Alexander and early Canada August 14th, and early Louise August 22nd. This class was very fine and the crop was good, and met a ready market. Crawford's early or late will scarcely amount to much; but early Barnards will be good, and the trees will be loaded.

This promising variety is likely to attract much attention, from the fact that its fruit-buds are found to be much hardier and will stand the winter better than Crawfords. Cherries and plums are a total failure, and scarcely any can appear on our markets. The black-knot on the plum trees is a seriously growing evil and a public calamity; as it will certainly sweep in a few years every plum tree from our county. The show for apples was very fine, but the set is not good, although a medium crop will be harvested. The early apples are now being gathered, but in many cases the samples are not fine, with the single exception of the Duchess. The fall and winter apples will be a light crop, and we think we have never seen so many damaged by the Codlin moth worm, especially so on clay soils. Our insect enemies are more than our vigilance. Pears are a light crop, and the samples are not well or handsomely formed.

Yours,

B. Gott.

Arkona Nurseries, *August 25th*, 1883.

ASPARAGUS.

By A. McD. Allan.

Glancing one day at the catalogue of a prominent seedsman, I observed, among other directions given for the cultivation of asparagus, to plant two-year-old roots in a richly prepared bed, in rows one foot apart, and the plants eight inches apart in the rows. Upon further reference, I found that the catalogues of other seedsmen varied very little from the one quoted from. Growers rely largely upon instructions given in these catalogues for growing the various seeds and roots or bulbs successfully, and it is therefore important that the information contained in such catalogues should be accurate.

Those who have grown this delicious esculent for market and have devoted more than ordinary attention to its cultivation, will readily agree with me when I say that the instructions quoted as to space, both between rows and plants, are far astray. In growing the plants from seed for sale these distances may suit very well, or even smaller space may suffice. But when the plants have been removed from the grounds of the plant producer into the beds of the grower for market, it will be found that more room must be given if a continued crop, combining both size and quality, is desired. One would think, from the usual instructions given for planting, that the roots do not extend far from the crown of the plant. This is not so. Let any grower examine the bed, even under the most ordinary cultivation, and he will find the roots extending from two to three feet from the crown, according to soil and cultivation. I would rather err on the other side by giving more room than is actually required than crowd the plants, as commonly done. It will pay to give room.

In planting a bed for permanent value, I would place the rows five feet apart, and plants three feet apart in the rows.

It is an error also to suppose that by digging deep and filling down a quantity of rich loam and manure the roots can be *profitably* induced downwards, as the natural tendency is more spreading. Those who have made a decided success of asparagus culture will, I feel sure, testify that cultivation of a foot in depth is quite enough. It has been the custom to trench deep with a spade in preparing the soil. This is not necessary. A plough with subsoiler will work the soil deep enough to suit all purposes.

In preparing the soil the first requisite is thorough drainage; and, although a light, friable soil, is, upon the whole, the best, there should be enough subsoil clay to retain the strength of manures. But a cold, stiff clay subsoil would be injurious.

Plants should be one, or not more than two season's growth when set out, as these are easier lifted without injury than the older ones. If the plants are set in fall they should be put nine to twelve inches deep. But in spring, where a furrow is opened for field planting a cover at first of about three inches will suit, and when the plants have taken fairly to the soil the furrow can be covered back on the plants. It is really an advantage to plant so that the crown is a foot under soil, as in the fall, when the stalks are all removed, the plough can be used and a furrow opened directly over the crown of the plants. This furrow should be filled with good manure, and by another turn of the plough return the soil over the manure, which forms an excellent winter cover. Each stool thus planted and cultivated with give 150 to 250 shoots in a season.

A liberal dressing of salt of about thirty to forty bushels to the acre should be given in the spring, and during the cropping season occasional sprinklings of lime, refuse of fish barrels or liquid manure may be used with profit.

Asparagus should not be cut much below the surface of the soil, as the part below is hard and fibrous. Many gardeners cut all the stalks for a few weeks and then allow all to grow and strengthen the weakened roots. If the large stalks only were cut and the smaller ones allowed to grow it would considerably prevent exhaustion of the plants. Some growers claim it pays to cut only every alternate year, while others prefer planting two beds or plots, which they cut alternate years, and thus keep a strong set of plants, giving the best results as to size and quality. It is better not to cut a crop the first year after planting—indeed, excepting under extraordinary circumstances, it is better to give the bed two years to gather root strength. If a bed seems strong the second year it may

be cut for two weeks. Crop cutting should cease with the month of June—indeed in early, warm soils it should cease by the middle of the month.

When the tops have completed their growth in the fall, and the seed ripened they should be cut and burned. When left too late the seed will fall and scatter over the grounds, so that in a year or two it will be found growing all over the garden like a weed.

An asparagus bed can be obtained by sowing the seed in the same way that young plants are placed, only not so deep. One seed can be placed at each point where a plant is wanted. In doing this it is best to open trenches so as to have the plants when grown with crowns about a foot from the surface, when these trenches are levelled. This levelling should be done gradually, as the plants gain in strength.

BONES.

Scattered about almost every kitchen yard we see bones, large and small, left to bleach in the sun, unsightly and useless. If only for the sake of neatness and taste about our dwellings, surely such things should not be thrown out at random. They have a use, however, and if a little trouble be expended they will be found of *great* value to every kitchen gardener or fruit grower. Bones contain many of the ingredients which enter into the growth of plants. But they do not act as a manure until thoroughly decomposed. To accomplish this we need moisture and heat. It is always better to have the bones ground fine, as decomposition is more easily accomplished in this state. We often read reports of bone dust giving best results on moist soil; this is simply on account of its decomposing more readily in such soil. It is an excellent fertilizer for grass which has become weak, or in bringing forward newly sown grass seed. To use it in such cases sow broadcast about six hundred pounds to the acre. Even double this quantity may be put on, as its effects can be seen often for years. After sowing, the topsoil should be gone over with a fine harrow. Frequently we do not find the expected effect of such an application the first year; but in after years it becomes quite evident.

Many think it best when used in connection with well-rotted barnyard manure, mixing both together before applying.

An excellent compost for the garden can be made by mixing bones with fresh wood ashes and keeping this wet. The proper way is to prepare a large, strong vessel that will hold a full season's ashes; cover the bottom with a thick layer of ashes; upon this place a layer of bones, not too close together; and then a good covering of ashes, and so on through the season, alternating ashes and bone until the vessel is filled. The ashes should be kept moist, all large bones should be broken small before putting in, so that they may reduce easier. Beginning the first of summer, and following these directions through the summer and winter, we will find when digging out the compost for use the following spring that the bones have been entirely reduced. But if the bones are ground any gardener or farmer can prepare a compost that will give as good results as the most expensive superphosphates, by taking moist, well-pulverized soil and bone dust in equal quantities, mix together in a heap, and then leave till heated and cooled off; then turn over with a spade until it heats again, and so on until the bone is completely decomposed. The compost is then ready for use, and quite equal to the best fertilizer in the market. This method of preparing bone is probably the best, as all the good qualities are preserved; whereas in reducing bone by ashes, as already described, a good deal of amonia is necessarily lost. It is well to apply bone dust in the fall on meadow lands and grass plots, as the action of fall and spring rains and winter frosts assist decomposition and mixing with the soil.

But, if no other use is made of bones, it will pay to gather them up, and when planting trees throw half a bushel of them in the bottom of the hole, cover well with soil, and place the tree upon this foundation. The roots will soon find their way to the bones and feed upon them for many years.

A. McD. Allan.

Goderich.

FRUITS FOR THE COLD NORTH.

So many of our members who reside in the valley of the Ottawa, the Algoma District, Nipissing, Haliburton, Muskoka, and Manitoba are asking for fruits that will thrive in their extremely cold regions; that any information upon this, to them very interesting subject, will be most acceptable. It happens that Mr. Charles Gibb, of Abbotsford, in the Province of Quebec, travelled through a large part of Russia, in company with Professor Budd, of the Iowa Agricultural College, in quest of the most hardy fruits that would endure the extremes of heat in summer and cold in winter. He made his visit during the summer of 1882, and has given the results of his investigations in a paper on Russian Fruits, published in the Eighth Report of the Montreal Horticultural Society, which is now copied from that report, with notes kindly supplied by Mr. Gibb, for the benefit of those who are seeking the information so fully given by him.

RUSSIAN FRUITS.

By Charles Gibb, Abbotsford, Quebec.

With Notes on the Russian Apples imported in 1870 by the U.S. Department of Agriculture.

It may seem strange that the fruits of Russia are so little known in this country, scarcely known even in Germany, that the fruits of one part of Russia are often but little known in another.

Our fruits came to us, as it were, by chance. In the days of the old French colony, the peasants of Normandy and Brittany brought with them the seeds, and perhaps the scions of the apples they loved most in their native land. Later, the Englishman introduced his favourite fruits, and the Scotchman his: in time the matter became commercial, and we soon had under trial in Canada and in the Eastern States all the best fruits of the *mild humid* portion of western Europe.

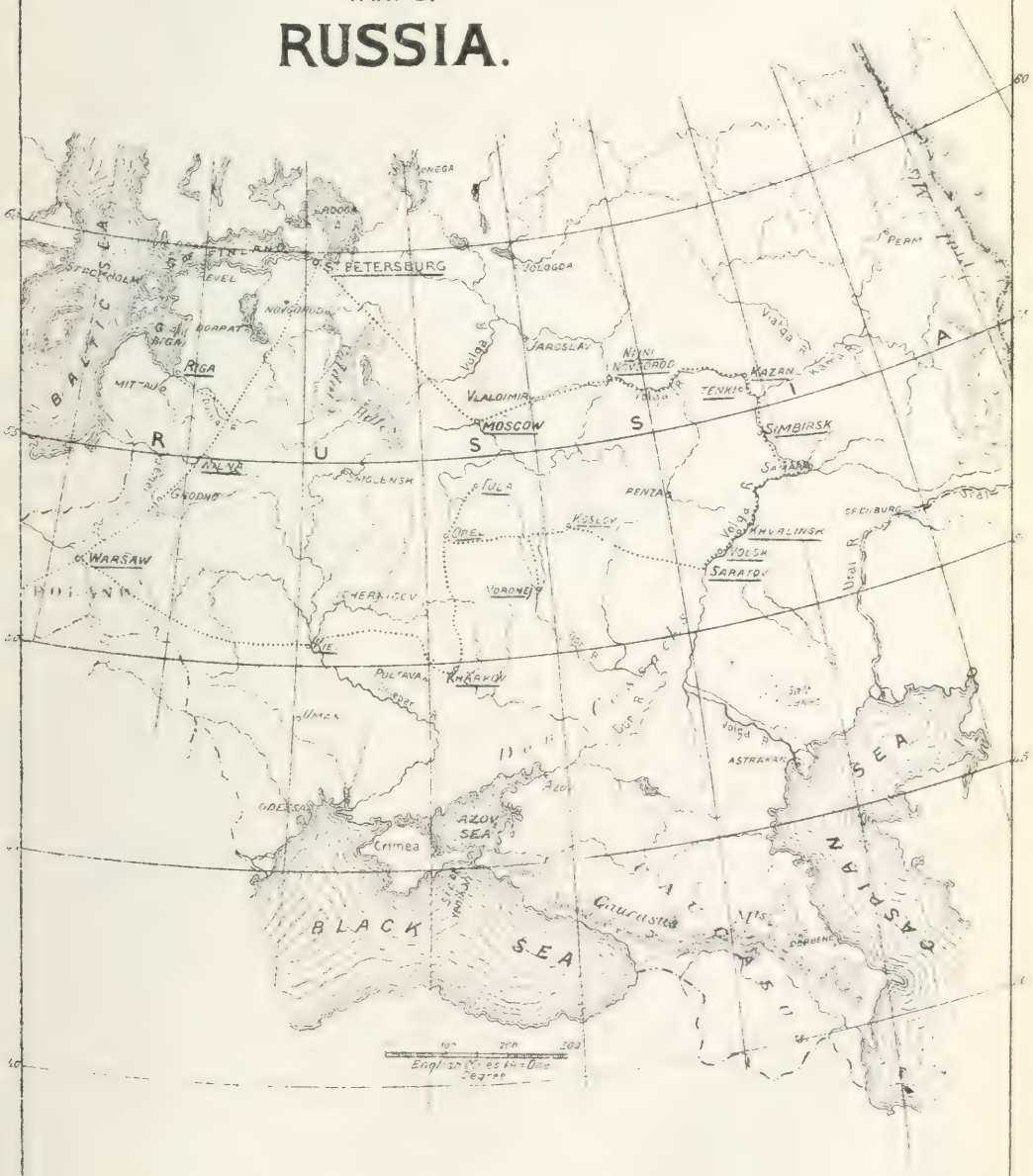
That not until 1882 we should have begun to explore our own *like climates* in the old world seems strange indeed!

The fruits of western Europe and their pure offspring, born on this continent, as a rule, are not long-lived upon the western prairies above latitude 43½°, not a success above 45½° in this Province, and that only in exceptionally favourable localities. In eastern Russia we find fruit growing a profitable industry in climates decidedly more severe than that of the city of Quebec. Hence we may expect to increase the area of fruit culture northward upon this continent very largely.

The uncertainty of these fruit trees of western Europe in the severer climates, had led to large importations by the State Agricultural College at Ames, Iowa. (See 7th Report Montreal Hort. Soc., p. 151.) Prof. Budd had gathered there the largest collection of fruits for severe climates, which I know to exist; but such was the uncertainty of nomenclature, such the difficulty of getting exact information as to their probable value, that the work of sorting out the best seemed a work of many years. Northern horticulturists were looking with great hope to the Russian fruits. The work could not be allowed to rest. Some one had to go to Russia. Mr. Budd and I went.

Those acquainted with Mr. Budd's work on the College farm at Ames, will readily see that several valuable lines of thought in this report are not mine but his.

MAP OF
PART OF
RUSSIA.



NOTE THE DOTTED LINE SHOWS THE ROUTE TAKEN.
& THE PLACES UNDERLINED ARE THOSE VISITED

To our Provincial and Canadian Governments I am indebted for the kind and hearty way in which they seconded my efforts by giving me such introductions to the Imperial Government as enabled me to follow up my work in Russia.

To the Department of Public Domains, and the Department of the Interior of the Imperial Government at St. Petersburg, I am indebted for the kind way in which they afforded us every assistance possible.

To our botanical and forestry friends my best thanks are due. In fact, one of the chief retrospective pleasures of my journey in Russia, was the kindness of my Russian friends, the kindness of my Polish friends.

Our work created some interest in Russia. Often, when speaking to people we happened to meet, we found that they knew all about our visit through notices in the Russian press.

At St. Petersburg it was intimated that a commissioner would, most probably, be sent next year to Canada and to the United States, to do work similar to that which we had done in Russia. Our fruits he will find pretty well catalogued, pretty well looked up. As soon as we know of his coming, means must be taken to insure his obtaining all possible information, and that in as short a time as possible.

Nomenclature in Russia is hopelessly confused. Different names are given to the same apple in different localities, the same name to different apples growing in adjacent districts. So many names, however formidable they may sound in Russian, mean merely round white, white sweet, white transparent, etc., names without individuality. Fortunately, a few names have been fixed by commercial demand, and are known by the same names throughout Russia.

NOTE.—The catalogue of apple trees imported by the U. S. Department of Agriculture from Dr. Regel, of St. Petersburg, in 1870, gives a fair, if not an exaggerated idea of the confusion in Russian nomenclature. Apples of Blue Pearmain, Anis, and Greening type turn out to be Duchess; even Red Astrachan seems to be Duchess. So that the same apple appears under many different names. Many, too, of the apples of eastern Russia, apples long and widely known, are not what their names represent them to be. The rendering of the Russian names into English sounds has been done from a Russian, not an English point of view. We must render these names *euphonically*, and thus retain the true music of the Russian language.

The translation of these names unfortunately is bad, in some cases wrong, as in 355, where Aport is translated Orange. In 339 Krimskaja Selonka is rightly translated Green Crimean; but in 439 K. Beel is White Krim, and in 563 Krimskoo is rendered Krimtarter. Then again in 200 and in 466, Repka is translated Turnip, whereas in 410 it is translated Seedling, which must be nearly correct, for apples of fine quality are known as Repka. The translation was done at the Russian Embassy in Washington, but unfortunately the Russian who dictated this translation was not an apple grower, and did not know that he was disintegrating the foundation stones of Russian nomenclature in this country.

Printers' errors are innumerable. In the Russian columns the printer seems to have had it all his own way. We have naliw, naliv, nalin, naleiv, which is rendered juicy or transparent. The Russian word for yellow is scholti, schotoi, schaltui, solatoi, scholtoe. Green is rendered, schlenka, sclenka, selonka, sclonnoe, and selennoe. The Province of Lievland is rendered Tierland. In 351 we have Cuadkaja for Sladkaja; and in 477 Ranette Kiluski is translated Queen of Kiew, or Kiev, as we would say; but who would suspect Kiluski of being Kievski: hence the Russian names have been dreaded. The

Russian language is as musical as Italian, and when the Russian names are properly rendered into English sounds it will divest them of half their difficulty. This matter *must* command the attention of the American Pomological Society at its next session.

A serious drawback to the fair trial of the Russian apple has been the habit of top-grafting it upon the crab. The Russian apple is not allied to the Siberian crab; and some varieties, especially the transparents, when top worked, seem to live under protest. Their fruit is smaller, and this gives an unfavourable idea of the Russian fruit. Such is the opinion of Mr. Tuttle, of Baraboo, Wis., and of Mr. Webster, of South Northfield, Vt., and others; and such is my own, after visiting a number of orchards in Wisconsin and Minnesota. Root grafted on crabs they do better, but the best stock for the Russian apple seems the hardy apple, not crab.

One great difficulty in Russian nomenclature arises from the strong family likeness of seedlings of like parentage. A hardy race of the apple, seemingly more nearly allied to the wild form than the cultivated apples of western Europe, has been grown for many centuries by seedling production, and has been reproducing itself from seed. Yet this is not strange news to us. Some families of apples, even when surrounded by apples of other types, have a strong tendency to reproduce themselves in their seedlings. The Gilpin or Little Romanite, Mr. Budd tells me, has been producing seedlings like itself in the West. The Calville family, too, is a striking example. Our Fameuse has a large progeny of strong parental likeness, and many think that two or more distinct varieties are commonly propagated under this name.

In Russia there is no standard of nomenclature, no authority that answers to the American Pomological Society or Downing, yet fruits received from that country must be propagated on this continent, as far as possible, under fixed, unchangeable names. The collections of apples on the farm of the State Agricultural College at Ames, Iowa, already number over 400 varieties, inclusive, no doubt, of many duplicates; additions, too, are being made from different parts of Russia. The collections received a year or two ago embraced most, not all, yet most, of the best varieties grown in Russia. We must have, on this continent, one fixed standard of nomenclature, and it would seem best that it should emanate from Ames.

The converting of the Russian names into English needs some thought. We have not the sounds in English to render them exactly. In this matter our aim must be simplicity. We need names our farmers can spell and pronounce rather than a laboured but more accurate rendering of the Russian sound. We have usually fallen in with the spelling in the list published by the Department of Agriculture at Washington, especially where varieties sent out by them have become known. However, the sound "ov" or "off" positively must not be spelled "ou" or "ow" as in Antonouka, Titowka, and for convenience we have used "ov" as in Antonovka, Titovka.

But one book, I believe, has been written on Russian Pomology, that by Dr. Edward Regel, Director of the Imperial Botanic Gardens at St. Petersburg, and published in 1868. This book was criticized severely, at the time of its issue, by some of the European journals; but I cannot help feeling that the critics did not take a full view of the situation. Dr. Regel, in the fickle climate of St. Petersburg, was unable to test very many of the varieties he described, able only to describe them as received, and under such names as they were received by. The fact is, Dr. Regel did his full fair share towards the doing of a great

work, and as Mr. Budd observed, had this been followed up by the organization of a National Pomological Society, Russian nomenclature would now be in a very different state.

Mr. Shroeder, of the Agricultural College at Petrovskoe Rasumovskoe at Moscow, has very complete notes, compiled from specimens and information received from different parts of Russia. These apples were, for the most part, received for trial on the College Farm, but I regret to say, that the unusual cold of the winter of 1877 and the cold clay soil upon which they are planted, has been against them.

This collection was very large and contained the greater part of the best apples of the steppe climates. It is much to be regretted that these notes of Mr. Shroeder's have not been published. Mr. Shroeder has not visited the orchards from whence the grafts and fruits were obtained, yet his notes we found singularly exact. Such was the opinion we gradually formed as we continued our work in the Russian orchards.

Pomology is a neglected science in Russia. What has been done seems to be local individual work, not united work. Strange this neglect on the part of a Government which has founded such botanic gardens, a Government which has done such noble work for future generations in its forestry department.

ON CLIMATES.

The true index to a climate is the flora of its botanic gardens; faulty only from the fact that these gardens are usually situated under the sheltering influence of some large town, and, therefore, not a true record of what might be grown in bleak exposures in the same latitude.

The same is true of the meteorological stations. They, too often, like our McGill College Observatory, record the temperature and winds of a sheltered city rather than that of the open country.

We frequently heard of very low temperatures in Russia, which do not seem verified by the Government records. Thermometers often differ at very low temperatures, especially when below forty. Yet the statements I quote in my report were made by careful observers, usually men on the forestry staff, and I therefore, with this caution, state the temperatures as given to me.

In this part of Canada we suffer from drought but not from diminished rainfall. I must explain this apparent contradiction. England is a land of verdure, the lawns are like velvet, the trees and thatched roofs covered with moss. What a contrast to our dry climate, and yet the annual rainfall of London is nearly thirteen inches less than that of Montreal. It is from aridity of air, and consequent rapid evaporation that we suffer.

In Russia we find fruit cultivated largely in climates where the conditions of extreme cold, dryness of air, and scanty rainfall are greatly intensified.

In the Government of Kasan, above latitude fifty-five, where the winter temperature is five degrees lower than in the city of Quebec, the rainfall a good deal less than one-half, the evaporation as great, we find apple growing a great commercial industry, *the* industry, in fact, in twelve peasant villages. This is the coldest profitable orchard region of the world, and the conditions of growth deserve study. The soil upon these exposed bluffs is a fine comminuted dusty clay, like a "loess." For retaining moisture,

for absorbing it, for holding frost without injury to the roots, there is no better. The dry fall here causes perfect maturity of growth; the thick, fine textured leaf does not suffer from the dryness of the air. It was Mr. Budd, whose microscopic study of the leaves of these climates first showed their peculiar cell structure. Thus we see that the apple tree of Kasan is a tree thoroughly adapted to the climate it lives in. However, the cold of Kasan seems more uniform than ours. In this Province we suffer from the warmth of the sun in late winter and early spring, warmth followed by sudden cold. This results in "bark-bursting" and "sun-scalding" of the trunk and the lower branches. Such injury is rare in eastern and middle Russia; but how much this is owing to climate, how much to the character of their hardy race of trees I cannot say. In Kasan, too, we find the cherry and the plum grown in fair quantity—that is, nearly all the peasants have some.

In the Government of Vladimir, a climate scarcely different from that of Kasan, the cherry is grown in vast quantity and shipped by the car load. Upon what kind of soil I cannot say.

At Simbirsk, on the Volga, in lat. 54°, a climate just like Kasan, a degree less cold, and about one inch less rainfall, we find the pear grown in fair quantity though only of second-rate quality. These trees, too, are thoroughly adapted to that climate, trees of terminate growth, with very thick, close-textured, dark glossy foliage, just like the pears of northern China. Simbirsk and Toula seem to be the northern limits of pear culture east of the Baltic Provinces.

At Saratoff, on the Volga, in lat. 51°, where the winter temperature is but one degree milder than the city of Quebec, we find very large orchards, one of 12,000 trees. A pear orchard, too, of 500 trees, and most of the varieties in good health. Yet here we were told that the mercury at times became solid. So near is Saratoff to the desert steppes, so light the rainfall, that irrigation is necessary for profitable orcharding.

Kursk and Voronesh, in lat. 51°, are the most southern of the points of special interest in middle Russia. I fancy their climate to be rather colder than that of sheltered city gardens in Montreal, about as cold, I should say, as our exposed mountain slope at Abbotsford.

Kiev is decidedly milder; more like Toronto.

St. Petersburg is in lat. 60°, so far north that the stars cease to be visible during two months in summer; the sun is too short a distance below the horizon. A cold coast climate; a Gaspé or Anticosti climate, one would suppose. A cool, short summer, a long, changeable winter, not colder on an average than Montreal, but subject to greater extremes of sudden cold. Early terminate growth is the special characteristic needed here.

Warsaw is a cold north German, rather than a Russian steppe climate.

I have to tender my thanks to Mr. Robert P. Scott, Secretary of the Meteorological Office in London, for his kindness in having prepared for me a table of the temperatures, humidity, etc., of certain points in Russia and Germany, and by way of contrast, of Canada also.

These tables are a great help towards our forming a correct idea of those climates from which we may expect so many of our future fruits.

	Mean Temperature.			Lowest Temp. in last Six Years.	Lowest Temp. in 1867.	Average Moisture. in the Air.	Average Annual Rainfall.	Authorities.
	Years.	Wint'r. Dc.-Fb.	Sum'r. Ju.-Ag.					
		Fahr.	Fahr.	Fahr.	Fahr.	%	Inches.	
		°	°	°	°			
St. Petersb'g	1743–1800 1805–1875	17·2	61·2	—35·7 XII.76	—27·0 I.31	82 28	20·5 11	Verhahrisse des Russischen Reiches, Annalles de l'observatoire de Russie, and Repertorium fur Meteorologie (Kanitz.)
Riga	1795–1831 1840–1875	24·0	62·6	—26·5 I.76	—12·8 XII.31	80 19	22·1 9	
Moscow	1779–1792 1810–1875	14·5	63·6	—38·4 XII.76	—36·4 II.1	80 11	23·4 11	
Kasan	1812–1820 1827–1875	9·0	64·5	—26·7 XII.75		77 9	17·3 8	
Simbirsk	1855–1864	9·9	64·8	?–22·0 II.77 I.78		77 4	18·7 4	
Saratof	1836–1857 1872–1875	15·3	68·6	?–26·7 XII.75		72 4	18·1 3	
Tula	1846–1847	15·4	64·9					
Orel	1838–1845 1851–1863	15·8	65·6				24·66 4	
Kursk	1833–1837 1840–1859 1865–1868	17·2	65·0				16·81 18	
Voronesh	1862–1865 1867–1869 1873–1875	16·2	65·2	—34·2 I.80		78 11	27·7 7	
Kief	1812–1875	22·6	65·1	—23·6 II.80		77 11	22·9 11	
Warsaw	1760–1763 1779–1799 1803–1875	25·7	64·2	—16·8 XII.79		80 11	22·2 11	
Berlin	16 years ? to 1868	31·3	65·0	—2·2 I.81		73 3	22·9 6	Doves Klimatologische Beitrage & Deutsche Seewarte obs'ns, 1876-81.
Vienna	1775–1874	30·9	67·5	—4·4 XII.79	7·9 XII.10	72	21·1 34	Vienna obsn's. (1880 returns.)
Reutlingen	2 years.	34·5	65·0					Klimatologische Beitrage.
Montreal	1870–1880	18·4	67·4	—25·2 XII.79		*73.97 8	38·53 11	Canadian Ann. Reports.
Quebec	1870–1880	14·2	63·9	—26·5 I.78			39·81 11	
Toronto	1841–1881	23·8	65·3	—15·1 II.81	—12·8 XII.13	77 41	34·75 41	Toronto General Register, 1881.
London	.....	.....	.....	.....	.....	81 17	25·17 30	Greenwich observations.

The figures entered under the Relative Humidity and Rainfall are the number of years from which the means have been obtained,

The spaces left blank indicate that no information is available.

* This item kindly filled in by Prof. McLeod, McGill College.

The Roman numerals in lowest temperature column indicate the month, and the figures the year in which it occured, as XII.76 means in December '76, I.76 means January '76; in the column of lowest temperature for 1867, the figures indicate the day of the month, as I.31 means January 31st.

APPLES.

Anis.—This is the leading apple of the Volga, the apple tree most highly prized, most largely grown. To the enquiry, which are your most profitable varieties? the reply invariably was Anis,—I think, invariably, my notes show no exception nor do I remember one. Such was the verdict in all the orchards of the different towns and villages between Kazan and Saratof. We first met with it in that curious semi-oriental bazaar, the Nijni Novgorod fair. Here we find the Russian peasant orchardist bringing large quantities of it to the bazaar in dark boxes, usually willow bark boxes, holding about three bushels.

In the southern part of the Government of Kazan, in latitude 55°, the same latitude as Moscow, 430 miles to the east of it, in a continental climate, a climate of extremes, and yet 600 miles nearer the North Pole than the city of Quebec, there are twelve villages where the peasant proprietors are apple growers, the chief industry in fact is apple growing. When we were there the little trees were loaded with fruit, yet the thermometer had been down to forty below zero the winter previous. Five years before, during one day, the temperature on these exposed loess bluffs was -40 Reaumur, or 58 below zero by Fahrenheit's thermometer. These low temperatures, however, do not seem verified by the meteorological records of the city of Kazan. Hearing of these low temperatures I looked for winter injury to the trees, but did not find any traces of it.

In answer to the query, which is the hardiest apple tree you have, the tree that has stood best the most trying winters? the answer, I believe, always was Anis. The general idea there is that it is of all kinds known, the apple tree that can be grown the farthest north, except what they call the Chinese apple, or as we would say, the Siberian crab, and these crabs, which are not common, are true Siberian Prunifolias, and not less hardy hybrids. In these villages the apple is grown, in a good season, certainly to the value of $50,000. In this, the coldest profitable orchard region in the world, the Anis is noted as their hardiest tree.

Many species of trees become dwarfed towards the northern limit of their growth. The most northern pines and spruces, birches and poplars, are but little shrubs; in the same way we find this Anis in Kazan, especially when growing on thin soil and without cultivation, loaded with fine fruit, and this, evidently, not one of their first crops, and yet the tree is not more than six feet high. We find little trees planted two, three, and even four together in a clump like stalks of corn, three or four to a hill, and these clumps ten feet apart each way. This is strictly true of some orchards, not so of others; for upon richer and moister soil, the trees grew somewhat larger, and as we went southwards, at each town we stayed at, we found the Anis larger, until, at Saratof, we saw Anis thirty-five years planted which had attained a diameter of trunk of ten inches. In nursery it is a slow and crooked grower such as nurserymen hate to grow and hate to sell after they have grown them. In orchards a slow grower. Trees in different places, pointed out as thirty years planted, seemed very small. In old orchards at Khvalinsk and elsewhere, it was considered the most long-lived tree. We saw there trees seventy years at the very least. These were fourteen inches in diamater of trunk, branched low as the Anis usually

is, and, though some large limbs had been removed some years ago, yet the trees were sound in trunk and top.

The Volga is a very old apple growing region. I am told that old poems, written about the time when Rurik was upon the throne of Kiev, about 850, alluded to this. The maiden whose neck was like a swan, and whose lips were like cherries, had cheeks like a Volga apple. The high colour of the apples of this dry reigon is very striking.

A wild rugged race of apple trees have been grown here for many centuries from seedling production, until we have a number of seedlings much alike in tree and fruit, and hence it is that the name Anis is but a family name.

As we used to gallop past these peasant orchards in our Tarantass—a basket on wheels without springs, usually drawn by three horses abreast—we were always struck by the beauty, even when some distance off, of one variety of the Anis. This is the Anis Alui or Pink Anis, and, I suppose, the same as the Anis Rosovoi or Rose Anis spoken of at Simbirsk and other places on the Volga. It is an oblate of full medium size, or about the size of the Fameuse, the colour of our Decarie, mostly a deep pink with a light blue bloom. In these dry climates we may expect high colour. When we were on the Volga it was too early to taste it in good condition, and besides this, it is often picked too early, perhaps, to reach distant markets by a certain time. Whether it will colour and ripen on its way to market, like a Duchess, or whether, like our St. Lawrence, it will almost cease to mature after it is picked from the tree, I cannot say. The grain is fine, the flesh white and firm. It is really a dessert apple of fine quality. It often sells at two roubles per pood, that is one dollar per thirty-six pounds, when poorer fruit is selling at thirty cents, and under Russian care it keeps till late winter or spring.

On account of its beauty and hence its salableness this Pink Anis is the most valuable of the family, and, therefore, when importing let us be sure to get it. It would seem to be the Anis of Mr. Shroeder, at Petrovskoe, but would appear not to be the Anis Alui of Kazan, of Dr. Regel, which is described as acid, and valuable only for cooking, unless this is Dr. Regel's verdict of its quality when grown in the cooler and moister summer of St. Petersburg.

There are other varieties of the Anis which differ but little in tree, yet differ more widely in texture of flesh, but they are not so pretty. At Simbirsk the Blue Anis is spoken of as the best for shipping very long distances as Perm and Siberia.

The Anis Belui, of Kazan, is not an Anis, but is an early autumn yellow apple of small size and fine quality. It is not a keeper, and yet is often gathered from the tree into a barrel of buckwheat hulls and put at once into a cold place, and thus kept till mid-winter and even later. As Mr. Budd suggests, this possibly is the Anis Koritschnevoe of Mr. Shroeder.

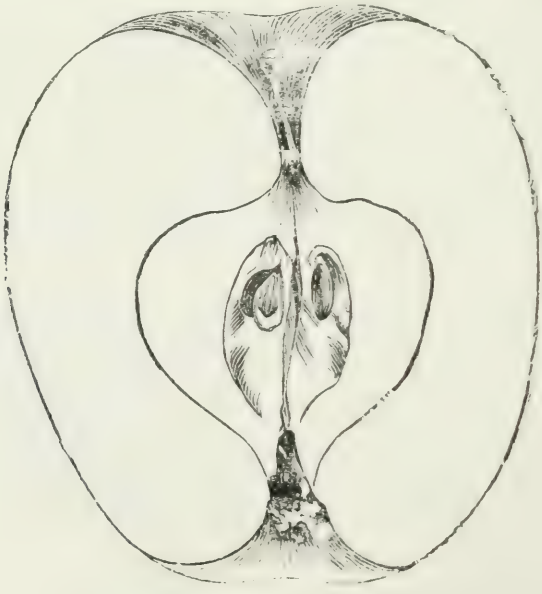
NOTE.—In the catalogue of the U. S. Department of Agriculture, No. 985, Red Anisette and Yellow Anisette, 987, are true varieties of the Anis. I saw them in fruiting in the orchard of A. W. Sias, Rochester, Minn., about 20th August last. The latter is partially red, the former perhaps a little more so. Also 382, Russian Green is a true Anis, but more of the Blue Anis type. 413, Skrischapfel, is more like Red Anis. I saw it in the orchard of Mr. Underwood, at Lake City, Minn. 225, Getman's Bean, has the angularity, flatness and conicness of Anis, but with increased size. The habit of top-

grafting these varieties on crab stocks causes them to lose much of their individuality both in tree and fruit. 403, Sweet Anisette, and 425, Pointed Anisette, I know nothing of. 984, Koursk Anisette, as I saw it at Mr. Underwood's, is a small green fruit with scarcely any basin and with wrinkled calyx, not an Anis at all.

Anisovka.—Under this name Mr. Shroeder tells us of a medium-sized flat, yellowish green apple, with bright red side, grown a good deal about Moscow, and said to be a very good dessert fruit, that keeps a long time, in fact all winter. Further south it would not keep so long. Mr. Goegginger, at Riga, gives us a minute description of it, evidently the same apple, which he says is grown a good deal at Moscow, and to the south, and which proves hardy in these severe climates. However, he states its season to be from November to December. Its value to us would depend much upon its keeping qualities. The Anisovka, so named on the Volga near Kazan, is a sweet apple ; that at Orel, Voronesh, etc., was thought to be the same as Anis or same as Vosnikovka, a small sweet apple said to be grown there in quantity. Such is the uncertain state of nomenclature.

NOTE.—185, Anisowka, of the Department of Agriculture Catalogue, as fruited by A. G. Tuttle, of Baraboo, Wis., is Duchess.

Antonovka.—This is the leading apple of the Russian steppes, the king apple of that vast prairie region from Tula to the south of Kharkof, from Kozlof to Kiev, a vast prairie region unsurpassed in fertility by any region on this continent. It is the leading apple



ANTONOVKA.

over a larger section of country than any other in Europe, than any other apple I know of. No apple holds so high a rank above others in any large section of this continent : and yet if the Baldwin were equally hardy I would much prefer it.

We first meet with Antonovka in the cold climate of Tenki, in Kazan, where it is

looked upon as the best of the "introduced" apple trees, and certainly the young trees we saw there were quite promising. In all the towns on the Volga we find the Antonovka noted as hardy as far as tried, and in some places tried long enough to be thoroughly relied upon.

It is, however, in central Russia that we find the Antonovka so highly prized. In the cold climate of Toula, in latitude 54°, about 120 miles south of Moscow, yet 480 miles further to the north than the city of Quebec, we find it considered their hardiest and most productive apple tree. A young tree, twelve years planted, is pointed out as having produced its eight poods, or we might say bushels; and old trees, long past their prime, twenty-five poods. In one peasant orchard we find the few scattered survivors of a previous orchard, nearly all of these were Antonovka; strange that this had stood while other kinds alongside of it, intermingled with it, had been killed—killed by a cold winter, I think in 1867.

In the Government of Tambof, half-way between Moscow and Saratof, there was a large orchard of 2,700 trees, only 730 of which survived the winter of 1867, when mild warm rainy weather was followed by sudden cold. Antonovka, though injured, was not killed; it and Anis stood the best. That winter, at Orel, in February, the thermometer went down to – 35 Rea.—that is, – 46 Fahrenheit—and in exposed places, – 37 Rea., or – 51 Fahrenheit, and yet Antonovka there is, above all others, their leading apple, and the old trees we saw there were, as far as I can remember, in fine health.

At Voronesh we hear the same opinion, and hear of trees that have produced twenty-seven poods, or 972 pounds, nearly half a ton, and are told that, although "other apples have their faults, this has none." It has its faults, but I quote this to show the widely spread opinion of those who grow it.

At Kursk we still find it their leading market fruit, and on the Bogdanoff estates, find it being planted in quantity, as about the best investment the proprietors know of. Such investments scatter broadcast innumerable little dividends in the form of food and labour. What a blessing to a country is a horticultural aristocracy—it begets a horticultural peasantry—a home-loving, peace-loving, law-abiding peasantry. In horticulture we find the safest anchorage for a peasant population. We asked, at the Bogdanoff estates why they specially chose Antonovka, and were planting *it* so largely, and were told it was because it was always a cash article, wanted in quantity for the northern market, for confections, for drying, for bottling in water, etc., and a tree, in good soil, and in good seasons, can produce its twenty-five poods.

At the Forestry Convention in Moscow, Mr. Budd asked one of the members, who was from Kiev, what were their best commercial apples. He called three others, also from the Government of Kiev, and after consulting together, named Antonovka first; the second upon the list was the winter Citronenapfel, a German apple of good quality but not hardy further north.

At Warsaw, where the climate is a cold north German, rather than a steppe climate, we find the Antonovka one of their leading apples, but not their best, and there not a late keeper. Throughout this vast steppe region, the Antonovka is "the" commercial apple, noted for its average annual bearing, its hardiness in extreme climate, its length of life, and fruitfulness in old age in these climates. It is also a first-rate nursery tree, a good

straight grower. In nurseries, when we found a number of rows of straight-growing, healthy trees, all of the same kind, it was sure to be Antonovka. Hence it has "a nursery run," just as the Ben Davis had in Wisconsin a few years ago, and likely thus to be over-rated ; but in central Russia it has been a century on trial—perhaps several centuries—and the quantities of it to be found in the Russian nurseries are grown to meet a known demand. It is a prairie apple suited to rich prairie soils it would seem. It does well on clayey soils, and likes moisture. On dry sandy soil the fruit is said to fall from the tree, and to be small in size. The fruit is large, sometimes very large, yellowish oblong, somewhat conic, acid, or subacid, with slight sweetness, rather coarse in texture. When left upon the tree till fully ripe it is said to have a fine melon flavour, but then it ceases to be a long keeper. In quality it is not quite like any apple I know. It may, certainly, be rated as second quality for eating and, I hope, first for cooking. But few of the best commercial apples of this continent are of first quality as dessert apples. Its great fault is its colour, though this does not prevent its being in active demand in all the Russian markets ; it is the colour to show bruises, yet it has the name of being a good shipping apple. At Warsaw it rarely keeps past Christmas. At Moscow, Mr. Shroeder cautiously says, till January or February. In central Russia it was often said till March, and, I think, even April was mentioned. I doubt if it will prove a much better keeper than our Fameuse.

How long an apple keeps depends very largely upon how it is kept. The Russians handle their fruit, pack it and keep it, with more care than we do. They seem to look upon an apple as a living thing to be kept alive as long as possible. If allowed to ripen on the tree it has a rich melon flavour, but then it will not keep. All apples in Russia picked for a distant market are picked rather earlier than we should pick them. When we arrived at Saratof, on September 11th, the apples were all picked and shipped to Moscow. At Tula, on September 18th, Antonovka was in huge piles in the orchards five feet wide, covered with basswood bark matting. At Orel, we find what has not been shipped, in an open shed in layers with straw between them.

This tree, on account of its good name and its good growth in nursery, is sure to become largely planted in this country. Its success will depend partly upon its suitability to our soil ; but, and mainly, perhaps, to the length of time it keeps under our method of picking, packing, and shipping.

NOTE.—Mr. Budd has received the Antonovka from Moscow, St. Petersburg, and Riga ; they all seem alike, judging from their leaf and growth, and would seem to be true to name. The fruit shown to me by Ellwanger and Barry, at Rochester, is Antonovka without doubt, but this was received by them from Moscow. Mr. Tuttle showed me trees in a neighbour's orchard, which the year before had borne fruit exactly like the Antonovka described by me.

I have strong hope that 236, the Antonovka of the Department Catalogue, is true to name.

Has the Antonovka run into varieties like so many other apples by seedling production? The answer to this question was usually in the negative, yet with one or two exceptions ; and at Tula an apple was shown to us as the Doukavoya, which seemed to be none other than Antonovka ; yet three fruit growers there each declared it to be distinct, and said it was as hardy and as productive.

Possart's Nalivia is said, at the Pomological School at Warsaw, to be a synonyme. Dr. Lucas, in one edition of his Pomology, held this view, and, in another edition, thought not; and this latter opinion is shared at Proskau and Riga.

Goegginger, of Riga, after a good deal of correspondence, rather thought they were not identical. Mr. Fritz Lucas now inserts it in his catalogue as a synonyme.

NOTE.—I would be very loath to assume that Nalivia, or Possart's Moskauer Nalivia, described by André Leroy in his Dictionnaire de Pomologie is the same as Antonovka. Mr. Budd also has a Possart's Nalivia, from Warsaw, which he does not think to be Antonovka.

Aport.—This is the family of which our Alexander is a member; a large and widely scattered family, and often of strong family type. No accurate notes seem to have been taken of the places where they live and thrive. We cannot in this country expect to do such work; the most we can do is to find out what is good there, import and propagate it here.

It is named Aport because imported long ago from Oporto, in Portugal, just as another Russian apple which long ago found its way into Virginia, comes back to Russia *via* Germany, under the name of Virginischer Rother.

Some of the apples we find under this name show by their features that they are near relations of the Emperor Alexander, many others show no likeness whatever. Sometimes under other names we find typical apples, like the Borodovka Belui, of Orel, which is just like Alexander, but white. At Kursk, too, we find, under the name of Sklianka, a fruit of aport form, but almost without colour.

I am not sure that we saw the Alexander in Russia, though I believe it to be grown there. At Volsk we found a fruit very like it, only wanting in that slight flatness of the base which our Alexander has. In the Kozlof market we find an apple just like it, though perhaps slightly larger in calyx, but it proved somewhat tough in texture, a sharp acid mingled with sweet; a fine apple, and it would seem a pretty good keeper. At Orel we find another, alike in look, but sweet: not as good as that in Kozlof or Voronesh markets.

Mr. Shroeder describes Aport as a very large, flat, conic apple with a red side, of aromatic flavour, not productive; too heavy, and liable to be blown from the tree, yet grown a good deal to the south of Moscow, at Orel, Tula, etc., the best of the Aports. This, I suppose, is our Alexander, but I cannot be certain.

In the report of the Royal Horticultural Society of London for 1822 the Alexander is mentioned as having been received from Riga, and is stated to be a native of southern Russia. It was most probably received from the late M. Wagner, grandfather of M. Chs. Henri Wagner.

The Aport osennie or autumn Aport, Mr. Fischer, at Veronesh, says, is like Titovka, —in fact often difficult to tell apart, although the one is a summer and the other a winter fruit. This seems like the apple we saw under this name on the Volga at Tenki, at Prince Gagarine's, and very like the coloured print of the Aport osennie given by Dr. Regel. It is a large, oblong, handsome winter apple. It, and what we saw in Kozlof market, I should think the most valuable of the apples known there as Aport. Of the summer Aports I seem to know nothing. On the Volga we saw several kinds, always large,

usually well coloured, and of fair quality, but none that specially struck me as of special value to us. I do not know that they have any just right to the name Aport, yet that name seems to be thought applicable to large apples.

NOTE.—I regret that I know but little of the Aports in the Department list. No. 166, Summer Aport has been fruited by Mr. A. Webster, South Northfield, Vt., an apple of no special merit, and not at all of Alexander family. 279, Winter Aport. Has been fruited by Mr. Sias, and is not an apple of Aport type. 252, Aport. 261, Aporto Turnip, and 355, Aport Herbst (unfortunately translatedautumn orange), I know nothing about. The Riabinouka has been fruited by Dr. Hoskins, and is a fruit very, very closely resembling Alexander, but this was received by him from D. W. Adams, of Waukon, Iowa, and may not be 455, of the Dept. Catalogue. The Grand Duke Constantine, of Ellwanger and Barry fruited upon my own trees during my absence. Mr. J. M. Fisk, my neighbour, who watched it carefully, says it is just like Alexander in tree and in appearance of fruit, but that the flesh is different, and ratherbetter than Alexander.

178, Barloff, as I saw it in Mr. Tuttle's orchard, has the size, form, colour, and distinctive features of Alexander, just like the one we saw and tasted at Orel in Russia; but that grown by Mr. Webster under this name and number is quite different. Those importing from Russia should include winter Aports and Kaiser Alexander, in their orders. Several large late keepers are known as Kaiser Alexander, and Dr. Regel, in his Russian Pomology, gives that name as a synonym to several apples of its type.

Arabka (Arabskoe).—Under this name there are one or more apples of decided promise. At Moscow, Mr. Shroeder tells us of a large conic apple of very deep colour, which is a long keeper. The tree he finds a little tender at Moscow, but says that it is grown a good deal in central Russia. In the market at Kozlof, we find what would appear to be this apple, in fair quantity, and known as Arabka, and specimens taken to Voronesh were recognized by Mr. Fischer, Director of the Botanic Gardens, who considers it a valuable cooking apple, that keeps till May ; but he added that that which he had received from Riga, under that name, had proved to be Gros Mogul. At Volsk, on the Volga, in latitude 52°, we found in an orchard, about twelve trees in profuse bearing, of an apple known there as Tchougounka, which means cast iron ; the fruit was roundish, of a dark purplish red, covered with a light bloom, much like the Blue Pearmain. It was above medium in size, although the trees were so overloaded ; a firm, solid, acid fruit, said there to keep two years. It also has the merit of holding on to the tree so firmly that I could hardly find a windfall. It and Steklianka were the only varieties in this orchard not yet picked, on the 8th Sept. At Saratof, on the Volga, we visited an orchard of 12,000 trees, where a week or two before they were employing 300 pickers and eighty-five packers to ship to Moscow 25,000 poods of apples. In a good year they either did (or could—I am not sure that I understood correctly) produce 85,000 poods, which is equal to 1,530 tons. From our description of the Tchougounka at Volsk they supposed it to be the Arabskoe—which apple they thought highly of, and placed upon their list as *third* for profit. This Arabskoe has been long known at Saratof. The query is whether the trees I have spoken of as growing at Volsk and Saratof, are the same as the Arabka of Kozlof and of Mr. Shroeder ; if so, the Arabka is likely to prove a valuable late keeper. A specimen picked at Volsk on the eighth Sept. was eaten by us at Warsaw on Oct. 4th ; a crude, juicy, sharp acid. It had been carried for nearly four weeks in a

leather bag, which was usually full of books and apples—a bag which had its full share of rough usage, except when used for my pillow, and yet this apple had received no injury. This Volsk Arabka is really a remarkable keeper.

On the Bogdanoff estates, near Kursk, we were shown a Tchougounka, a large round apple not quite as dark as that at Volsk, and looking rather more like what we saw at Kozlof. This is found there to be a good cooking fruit, and a good keeper; but the tree is only fairly hardy—not ironclad, as we would say.

The Arabka, and Arabka Polasatoe of Regel are altogether different apples; so, too, is that shown to us at Nijni Novgorod, an egg shaped, fair sized, hard, long keeper.

Note.—No. 184, Arabskoe, of the Department of Agriculture Catalogue has been fruited by Mr. Tuttle, also by Mr. Budd, at Ames, Iowa, and is pronounced by them to be either Duchess or something very closely resembling it. The Arabskoe, however, of Ellwanger and Barry, is a large flattish fruit of deep pink colour, very beautiful, though only of fair quality. It is not the long keeper of the Arabskoe we saw at Volsk, and is more like that which we saw at Kursk, and yet probably not it. 315, Herrenapfel, has been fruited by Mr. Tuttle, and is described by him as an apple the size of Blue Pearmain, with much the same colour and bloom; a clear, strong, pleasant acid; a fruit that hangs well on to the tree, and keeps longer than Longfield. The Herrenapfels of the Riga catalogues are also of Arabskoe type. Mr. Goegginger described to me the Polnischer Herrenapfel as a medium-sized fruit, red all over, and of first quality. A good marxet market apple from October till December. A hardy tree and good bearer.

Arcad.—I am not sure that there is any apple in this family of special value. They are a family of early apples, sweetish, and of medium size; but the trees have proved very hardy.

In Moscow, in 1877, during one week the thermometer ranged from −32 to −34 R. —that is, from −40 to −44 Fahr; and one day it fell to −35 R.,—that is, to −46¾ Fahr. This was the register on the college farm at Petrovskoe, and caused sad injury to the young orchard, for here Mr. Shroeder had a heavy soil, which tended to produce late growth, as well as a severe climate to contend with. Of all the varieties in the orchard which stood the best? The Koritschnovoes and the Arcads; and of the Arcads the Dlennuii, or long Arcad seemed about the best. At Voronesh Mr. Fischer telis us of six kinds of Arcad, all much alike, early and sweet; but he says that the tree, though apparently hardy, does not live anything like as long as the Antonovka, of which latter he shows fine healthy trees forty years planted; whereas the Arcads usually die at twenty; that is, they die by degrees, branch by branch—one might suppose like our Canada Baldwin, on warm soils from sunscald, caused by early flow of sap, so that perhaps it needs heavier soil.

Dr. Regel, in his work, describes a Red Arcad, which is an apple of first quality that keeps all winter. The coloured print of it is perhaps the most strikingly beautiful in the book. I enquired in many places about this apple, but could get no information about it. An apple of such beauty is worth looking after.

Note.—In the Dep. Agri. list Yellow Arcadian appears under Nos. 188, 327, 231. One, or more of them—I do not know which—is noted as an early apple of from fair to inferior quality. No. 476 Red Arcade, has not fruited to my knowledge. 453, Beautiful Arcade, is a firm, white, somewhat juicy, sweet apple, which Mr. Tuttle thinks very

favourably of. 592, long Arcade, a small or medium sized, flat fruit, with fine grained white flesh. Very pretty, and tree very hardy and productive. Season, late fall or early winter. So says Mr. Tuttle. 203, Arcade, 430, round waxen Arcade, and 864, smoky Arcade, I know nothing about.

Beresinskoe.—Mr. Shroeder speaks of this as a large whitish apple with yellow side, flesh firm but breaking ; not able to bear carriage well, but a very fine autumn dessert fruit.

Beriosovka.—This we met and took a great fancy to in the Kozlof market. As we saw it there, it was a fruit of full medium size, oblate, red on one side in splashes and specks ; very firm, yet breaking ; very juicy, with a fine mingling of subacid and sweetness. The seeds were black on 13th Sept., yet it seemed likely to keep two months. At Voronesh we showed a specimen to Mr. Fischer, who pronounced it true to name, and, moreover, said it was a good, hardy, and productive tree, and a fine fruit. Season late autumn.

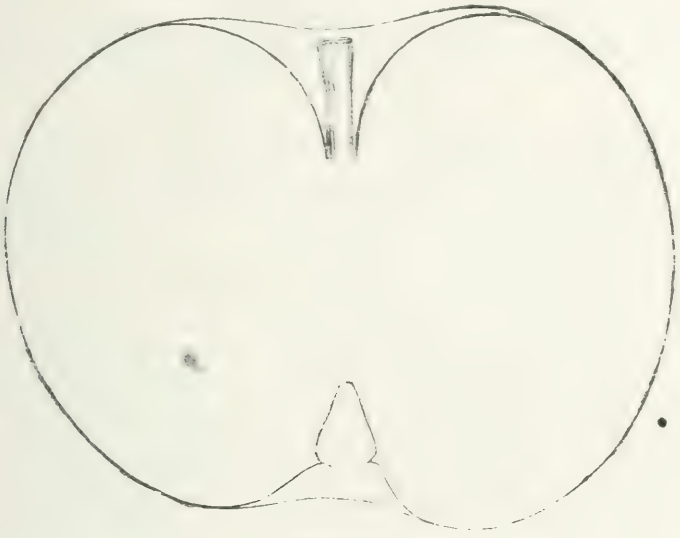
Blackwood (Tchernoe Derevo) is a tree long known upon the Volga. At Khvalinsk we saw trees of it at least seventy years old, and at Kazan trees thirty years of age. It is a heavy bearer, but not a tree of extra hardiness. It does not sunscald, but its upper branches are sometimes killed, and this, no doubt, sometimes owing to exhaustion from heavy bearing. On the Volga it is the favourite late-keeping apple for home use. Were the tree hardy enough to be grown at Quebec it probably would prove valuable as a long keeper. Mr. A. Webster, of East Roxbury, Vermont, who has kindly given us, in the last report of the Montreal Horticultural Society, his opinion upon thirty-eight varieties of Russian apples, tested by him, says of the Tchernoe Derevo : " Fruit good, but not of special value—fall." Grown at the north, it is a fruit of very fine quality, and a pretty good keeper ; such was our opinion as we tasted it on the Volga. It is one of those mild apples which seem specially to please the Russian palate. In the Volga region and in central Russia its quality is first-rate, and thus it is that, although of small size and unattractive colour, it sells at extra prices, and becomes very profitable. At Saratof, in the two largest orchards we visited, one of 12,000 and the other of 4,000 trees, the Blackwood was named second on their list for profit, second only to Anis. In Russia it sells at one and a-half roubles per pood, seventy-five cents per thirty-six lbs., when other apples are selling at forty kop., or twenty cents per pood, and it even has been sold up to five roubles per pood. Only, if picked early and kept in cool place would be a keeping apple with us, and if so, possibly a valuable apple for home use.

Note.—The Blackwood, fruited by Mr. Webster, is No. 407 of Department of Agriculture Catalogue, and from the description of tree and fruit I believe it to be true to name.

Bogdanoff.—This is an apple which has been grown upon the Bogdanoff estates, near Kursk, probably for two centuries. Hitherto it has been known under the name of Repka. There were about 300 trees of it in the orchard we visited. It is a stout, upright grower. Taking an average of years, the Antonovka produces more fruit per tree, but it does not keep so long. A large number of varieties have been tried, yet, next to Antonovka,

they consider it their most profitable winter apple. As a late keeping apple for home use they much prefer it to any other The fruit is large, and in form, size, and striping, much like our St. Lawrence.

The flesh, when tasted on 21st Sept., was whitish, firm, juicy, crude, unripe, rather fine grained, a mixture of sweet and crude sharp acid. As a long keeping apple of fine quality, I have every hope of this being a very valuable variety.



BOGDANOFF.

A good, late keeping apple would be a perfect God-send to our Province and its like climates. Bogdanoff is a most promising variety, well-worthy of its name, which means God-given.

Bohemian Girl (Tsiganka, Zuiganka).—We saw this beautiful apple in the Voronesh market, a medium-sized semi-oblate fruit, blushed all over with deep pink. The flesh is white, but quite past season when we tasted it. It is a great beauty, and Mr. Fischer says a hardy tree. A summer apple well-worthy of trial.

Borovinka (Borovitski) must be looked upon as a family name. It was a member of this family that, long ago, migrated to this country and became known everywhere as the Duchess of Oldenburg. This apple we did not see in Russia. At Tenki, in the Government of Kazan, in a peasant orchard, we saw trees in full bearing of a fruit which both Mr. Budd and I looking carefully at it thought to be Duchess: but on tasting it we found it so fine in grain and so mildly acid, that we felt that no such difference in texture and flavour could result from change of soil and climate. At Prince Gagarine's, Borovinka, perhaps this one, is looked upon as one of the varities long known, not like Arabka and Antonovka introduced of late years. In another village near there we found another apple just like Duchess but sweet, or to say the least sweetish.

The cut of Bogdanoff was taken from a rather large specimen. The other cuts are of fair average size. Antonovka, Titovka and Sapieganka, are copied from the "Sad i Ogrod" by Prof. Jankowski, of Warsaw. The others I traced from specimens.

Mr. Shroeder, at Petrovskoe, describes the Borovinka as a large, round, pretty, striped apple, good for dessert or cooking, and says it is grown a good deal in middle Russia. We did not see the Duchess there or any apple like it. We find apples grown at Tula, Orel, Voronesh, etc., called Borovinka, which are not of Duchess type at all, more like white Koroshavka. At Orel, however, we find a Borovinka somewhat like Duchess, acid and in season till December or January, and said to be valuable and grown there in some quantity—so say my notes, though the apple has gone out of mind. On the Volga is grown a flat autumn striped apple which finds its way in quantity into the Kazan and Nijni markets also called Borovinka, an apple, I think, worthy of being introduced.

Note.—The Duchess appears under many different names in the Department of Agriculture Catalogue. No. 1, Red Astrahan, as fruited in the old Moulton orchard, now owned by Mr. Spaulding, at Minneapolis, would seem to be Duchess. No. 184, Arabian, fruited by Mr. Tuttle, is also Duchess. No. 187, Glass Green, as fruited both by Mr. Tuttle and Mr. Spaulding is either Duchess or an apple only to be known from it by its being two or three weeks later in ripening. 185, Anisowka Anisette, is another, also fruited by Mr. Tuttle. 490, Clay apple, Mr. Spaulding says, is like Duchess, but more juicy and less acid, and rather finer in the grain, and seems to colour later. Another in Mr. Spaulding's orchard, whose number was lost, though in appearance like Duchess, was sweetish, reminding me very much of the sweet Duchess which we came across in the Government of Kazan. 579, summer Lowland, Mr. Tuttle finds like Duchess in appearance, but a pleasant subacid of excellent quality. It ripens a month later than Duchess. Of apples less decidedly Duchess in character there are many in the Department Catalogue. However, of those named Borovinka, Nos. 278, 548, and 874, I know nothing. No. 245 fruited by Mr. Budd is like Duchess but later.

Charlamovskoe.—Mr. Shroeder speaks of this as a large, flat cooking apple with a red side, a variety he thinks highly of. Whether this may be that grown by Mr. Webster, in Vermont, and described in the Montreal Horticultural Report, page 53, I cannot say.

Mr. A. G. Tuttle, Baraboo, Wisconsin, has an apple received by him under this name, which Mr. Tuttle says, "has the beauty of Duchess and quality of Domine and keeps through winter." Mr. Tuttle, I believe, has got hold of a valuable fruit.

Crimean Apple (Krimskoe).—This is the name under which we find, in different places, apples believed to have been brought from that region.

On the Bogdanoff estates, near Kursk, we find an oblong, egg-shaped, red apple below medium in size, firm in flesh, and sharp acid, mingled with sweet; the tree is pretty hardy there, and, if I remember rightly, the fruit is a long keeper. At Volsk, the Krimskoe, though good in colour, keeping and quality, was too small and conic to be valuable. At Kluchiche, near Kazan, at Marquise Paulucci's, we saw a large roundish striped apple, something like Duchess, not ripe; the tree was said to be fairly hardy in that extreme, climate, and further south noted for its immense fruit.

Good Peasant (Dobryi Krestianin).—This apple is highly prized by the Russian people, and sells well in their market in spite of its unattractive colour and small size. Our Pomme Grise, though long valued for its fine quality, does not sell at extra prices in the Montreal market, and, I fear, this Good Peasant would fetch but small prices when placed alongside better looking fruit. The tree, both in leaf and bud, is crab-like; its leaf is prunifolia in form, yet slightly pubescent. Near Kazan we saw trees of it more than thirty

years old. At Volsk, Khvalinsk, Tula, Voronesh, everywhere almost we went, either on the Volga or in middle Russia we found it a great favourite. People seemed to go into ecstacies over its delicious flavour. Mr. Shroeder, at Petrovskoe, does not find it quite hardy, though at Tula 120 miles further south, we saw a few fine old trees of it. Let us look upon it as a crab, a large sized green crab of fine quality, for it certainly is as hardy as some of our hybrid Siberians, and I think we shall find it a useful crab for home use for rather severe climates.

Grand Mother (Baboushkino) is described by Mr. Shroeder as a beautiful bright red medium sized oblate apple of fine quality. At Voronesh, Mr. Fischer says it is a good and productive tree, and an excellent large sized apple that keeps till March. Mr. Regel describes it as an apple of first quality that keeps till May. What we saw under this name were about medium size, flat rather, with a large thick stalk ; flesh white, firm, breaking, juicy, find grained, unripe, but showing every sign of fine quality, and of being a long keeper. Its appearance is against it, yet these hardy long keepers deserve thorough trial.

Grushevka, or pear apple tree is probably so called from its pear like pyramidal form of tree. It is spoken of by Mr. Shroeder, as a hardy and productive tree, planted a good deal for market in central Russia and bearing a small early white fruit. On the Bogdanoff estates we see trees of it, with their pubescent leaves of prunifolia form like the Good Peasant. Here it is spoken of as their earliest apple, white, sweet, of medium size, and good quality. At Tula we are told it is their earliest apple. Evidently from all we hear rather a favourite. The German Grushevka Mr. Shroeder says is much like it, but a little better in quality, and a week later. That called Grushevka at Kazan was a hard, yellow, fall fruit ; neither must we confound it with the Gusevka of Regel which is described as a large winter cooking apple, but it is without doubt the Grushevka Moskovka of Dr. Regel.

Kalamas.—Under this name we saw in one of the peasant villages, in the Government of Kazan, an apple of medum or large size, deep red, with a light bloom, the beautiful colour of the pink Anis, but larger, and marked with little dots. The flesh was greenish white, crude and unripe. Such a beautiful fruit, thriving in so cold a climate should not be lost sight of.

Koritschnovoie Ananasnoe (literally the Cinnamon Pineapple).—This Mr. Fischer says is a small flat fruit of dark brownish red colour, and very fine flavour. The tree, too, has proved very hardy at Voronesh. Mr. Shroeder speaks of its hardiness, its earliness, and aromatic flavour. At Orel, too, we hear it well spoken of. A fine flavoured early apple it would seem. The Kor. Anan. of Regel seems very different.

Koritschnovoie Polasatoe.—This is the tree that stood the extreme cold of 1877, at Petrovskoe, when the thermometer went down to 44° below zero. Mr. Shroeder says that it is much like Ananasnoe but striped, and ripens a month later, and keeps longer. This apple we saw to some extent in central Russia. In the markets, when piled in pyramidal form, stalks upwards, they look like small Duchess. However, the basin is more shallow, the form more conic. It has a peculiar flavour and is quite good. A fall fruit which has proved quite profitable in cold climates.

Lead apple (Svinsovka).— Mr. Shroeder says is a small, hard green cooking apple that keeps till the new year, or till new apples—I am not sure which. We hear of it at Orel and at Voronesh, and as Mr. Fischer says, it is much like Zelonka.

NOTE.—Longfield (Langerfeldskoe, English Pippin).—At Mr. C. H. Wagner's, at Riga, Mr. Budd was told that this apple was a seedling which had been grown by an Englishman on the Volga, and had become known as the Englishman's Pippin (Englischer Pepping), and is said to have been grown a good deal in the Livonian Provinces of Russia. It is an apple which has always come to us true to name. Mr. Budd received it from Moscow, also from the Department of Agriculture as 161, Longfield, and 587, English Pippin. In tree and fruit they are without any doubt alike. The tree is hardy, but not as hardy as Duchess. It is an early winter fruit of fine quality and bright attractive colour. Its fault is its size, which is often below medium. Mr. Tuttle considers that the finding of this tree alone has repaid his trouble in testing such a large number of the Russian apples, and says that on account of its regular annual bearing, good quality, and bright attractive colour, he would not hesitate to plant it largely for market purposes.

Malite (Malt).—This name has been given to a number of apples on the Volga, grown in quantity from Kazan to Saratof. In the Government of Kazan, a little red Malite is one of their favourite market apples. It is medium or small in size, flat and often ribbed. The flesh is white, crisp, tender and juicy. Many of the peasants in the villages near Kazan, place it among their five best for profit, and grow it in quantity. At Simbirsk a Malite has the same bright dark colour, but with a bloom like pink Anis and yellowish flesh; a fine grained, juicy apple, with firm but breaking flesh and sprightly flavour. At Saratof, Malite, I know not what kind, is named among their few best apples, and is one of the kinds growing there for a very long time. We find other apples, too, more or less of this type. At Simbirsk we find a large fall fruit somewhat resembling Duchess, and of good quality, quite unlike other apples named Malite, and perhaps worthy of trial.

Red Koroshavka (Koroshavka Alui) is one of those strikingly beautiful apples one cannot forget. It has the colour of our Victoria, a bright deep pink, and any part not so coloured is as nearly as possible pure white. It is usually of medium size, often above, regular in outline, and never ribbed like pink Anis. Like Victoria, its flesh is a pure white, and on 29th August, firm, crude acid, not ripe enough to fairly judge. This tree, like the Anis, when grown in the north is dwarf in habit, and where broken down by weight of snow, sound at the heart, and evidently a young and abundant bearer. At Tenki it was said to keep till January.

At Simbirsk we hear of a Koroshavka Alui which may be this. The Koroshavka of Regel is a long stalked little fruit very different from this or white Koroshavka.

Reinette Kurski.—Mr. Shroeder describes this as a medium-sized, flat, irregular, ribbed, yellow apple, named from the town of Kursk. Not hardy at Moscow, but a good tree further south, and a really good dessert fruit that keeps till spring. The query to my mind is whether this may not be the Reinette Russki which we saw at Kursk, but which they would not admit to be the Reinette Kurski. It is a five-sided apple of the size of our Fameuse, with red on one side. A fruit of fine quality, apparently a keeper, and perhaps valuable.

Roshdestvenskoe.—I can only quote Mr. Shroeder's opinion that it is a medium-sized or largish apple of high conic form, much like a gilliflower; a dark, dull green with a

dark red side. A good table and cooking apple, and a pretty good keeper. The tree is not hardy at Moscow, but does well further south.

Romnenskoe, named from the town of Romna.—This Mr. Shroeder says is a round, solid olive-green fruit, with dark red side. Not hardy at Moscow, but valuable further south. It is pretty enough to sell, and is a fair dessert and good cooking apple that keeps till spring.

Serinkia (Sierianka).—This is said to be the Lehmapfel (or grey apple) of Germany, and is a very popular apple in the Baltic provinces, where it has been grown some say for a century or two. In Livonia, Courland and Poland, it has been planted in large quantity, and evidently is a favourite fruit. It has been propagated in quantity by the nurseries in Riga. It is a stout, straight and moderately vigorous grower. The fruit is of medium size, yellow with a little red, and is said by everyone to be of excellent quality. Unfortunately we did not see the fruit. In middle Russia, too, at Orel and Voronesh, we hear it spoken of as a good hardy tree, and an excellent dessert fruit.

Skrischapfel.—Dr. Regel speaks of this as an excellent table apple that keeps until the following summer, and says that the tree endures the coldest winters at St. Petersburg, and has been grown at Moscow, Tula, etc. Mr. Shroeder says it is a medium or small-sized apple, striped (but perhaps this only on one side, I am not sure), a very hardy tree, an apple of really good quality ; good for dessert and cooking, that keeps sometimes till August. The tree has branches like a Scott's Winter, which cannot easily be torn out. The fruit, as we saw it, green, with a little dull red beginning to appear on one side, and very heavy. Flesh greenish, juicy, rather tender, crude, and but very mildly acid, when ripe lacking acid one would think, otherwise quite good. A good late keeper for cold climates.

Note.—This is not the Skrischapfel of the Department of Agriculture which I have noted under the head of Anis.

Skrute (Beel Skrute) is a profitable apple on the Upper Volga. A good-sized white apple, with red marblings, showy and very popular, but so variable in quality that I have thought there must be more than one apple in the markets under this name. Often its cavity is very shallow, and the stem like a peg that has been driven in, but this is not always so. Though fine-grained and juicy, it is sometimes woolly and flavourless, so that I cannot recommend it, in spite of its wide popularity in those cold climates.

Sklianka (Steklanka Zelonka).—In this family there are some apples of the Rhode Island Greening type which promise to be very valuable.

Mr. Shroeder describes the S. Ostrovkaya, as a small conic green apple with a dull red side, long stalk and corrugated basin ; good for cooking and dessert. It keeps till summer, and is a good hardy Russian tree, grown more in the south-west, a variety considered valuable by Mr. Shroeder. The S. pesochnoe, or Sandy Sklianka, Mr. Shroeder says is a sour cooking fruit of medium size ; greenish yellow, with some red, that keeps till or into winter. We probably met with both these apples, and yet we cannot be sure.

At Volsk we saw trees of this Sklianka type, bearing profusely, and yet full medium n size ; surely the fruit would be large when bearing in moderation. It was green, rarely with some red on one side ; very firm, crude, acid, with some slight sweetness.

The tree seemed quite hardy at Volsk, and there seemed no doubt as to its bearing or keeping qualities. I believe we saw this same fruit in the Saratof market.

The Zelenka Moldavka of Voronesh is an apple I wish to draw special attention to. The specimen we had was large and oblong ; a solid apple with a texture somewhat like a Rhode Island Greening ; firm, acid, with very little sweetness. We got it at Voronesh on 13th Sept., and this description was made when it was tasted at Warsaw on Oct. 4th. It had been kept in our apple bag, but had not suffered. Mr. Fischer showed us trees which seemed hardy and healthy ; the fruit has the points of a first-rate cooking apple, and is a fair eating apple ; a variety of great promise.

Dr. Regel describes several varieties of Sklianka, among other the Sklianka Revelskaya, a yellowish fruit with a little red on one side, grown at Pskov, Petersburg, and other places ; usually hardy, but sometimes injured in severe winters. The S. Zelonka, a small, green, very productive cooking apple, grown near Dorpat and the Baltic provinces, generally. S. Medovka (or Reinette Voronesh), received from Voronesh, green and later a greenish yellow ; an excellent table apple, roundish, and of full medium size. It keeps all winter, and the tree is hardy at St. Petersburg in severe winters.

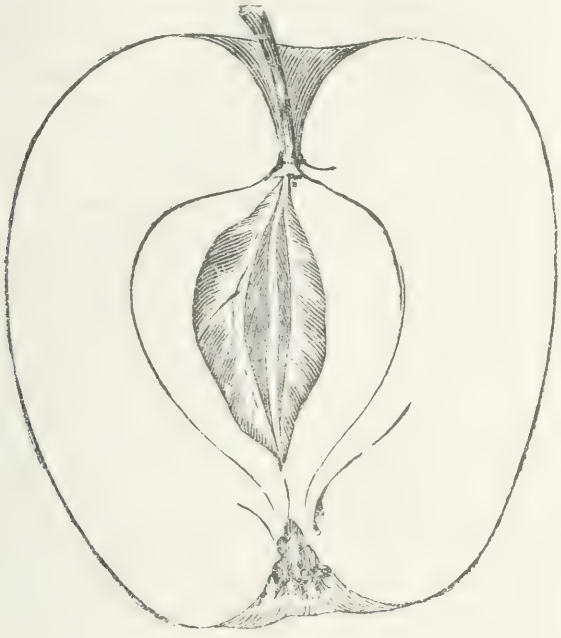
At Tula, Orel, Voronesh, etc., we see or hear of long keeping Greenings, under the name of Sklianka and Zelonka, which are considered valuable in these cold climates. Of those we saw the Zelonka Moldavka of Voronesh, and the Sklianka of Volsk would seem the most promising.

NOTE—472, Ostrokoffs, of the Department of Agriculture, a small green apple, very conic, very wrinkled towards the calyx, and without basin, which I saw at Mr. Underwood's, is probably true to name. No. 597, the Sandy Glass, is also perhaps true to name.

Titovka (Titus apple).—A large, handsome fruit, to be seen in quantity in all the markets of the Volga, and of middle Russia. It looks like a large, ribbed, elongated Duchess, and on account of its large size and attractive colour, very salable, and therefore valuable. At Simbirsk it is considered one of the most profitable. At Tenki, near Kazan, it is a success, both in nursery and orchard, and from what we saw would seem to have been grown there for many years. At Tula we saw one very old tree of it, a survivor of an ancient orchard, killed by a severe winter many years ago. It is therefore a tree that thrives in the severest climates. It would not be safe to assume it to be quite as hardy as Anis or Antonovka, yet it is not very far from it. The flesh is coarse, but juicy and mildly acid ; quite good ; not at all disappointing ; rather better than Duchess, because less acid. In season it is one of the earliest, yet is a summer or late summer fruit. We might reasonably expect this to become one of the great commercial apples of our country.

NOTE.—No. 230, Titovka (Titus Apple), of Department of Agriculture is not the fruit above described, but seems to be that described and pictured by Dr. Regel in his work ; the same as that sent by Mr. H. Goegginger from Riga to Mr. Wm. Evans, of Montreal, this last October ; the same, too, as that sent out by Ellwanger and Barry, and which they describe as a large apple, resembling Twenty Ounce, and which they say is the most showy

of the new Russians tested by them so far. This Titovka is in appearance more like Zolotoreff, No. 275 of Department of Agriculture Catalogue, but not it. Mr. Budd and I tasted and compared them last August.



TITOVKA.

Ukrainskoe.—I was very much struck by a young tree I saw at Vilna, in full bearing. It looked as if bearing a crop of uncoloured Northern Spy. At Orel we hear of it as a hardy tree, and a good apple, but not as productive as some other kinds. Mr. Shroeder also notes it as a light bearer, but says the tree is hardy, and that it is a good cooking and second quality eating apple, which ships and keeps well. At Saratof we are told of an apple under this name that has been grown there for a very long time, said to be quite hardy in that climate, and to keep till March, and it is noted there as one of their profitable market fruits. In the milder climate of Warsaw, our friends say, Why grow Ukrainskoe, a green apple, when you might as well grow a red one. Colour in an apple is a very good point, yet I feel that any good late keeping apple that thrives upon the Russian steppes is worthy of trial.

NOTE.—No. 290, Ukrainskoe, of Department of Agriculture, as I saw it fruiting at Mr. Underwood's, seemed true to name.

Vargul.—A firm, flatish, conic apple of yellowish colour, with some red on one side, of extra quality, and keeps till May or June,—so says Mr. Shroeder. I do not think we saw it, yet we heard of it often in middle Russia. At Tula an amateur friend puts it among his five best varieties. At Orel, at Voronesh, and Kursk, we hear an apple well spoken of under this name.

Vargulok (or little Vargul) is often confounded with Vargul, and said by some to

be the same. Mr. Shroeder has both, and describes this as a medium sized yellowish green apple, good for cooking or table: a long keeper, and tree hardy at Moscow.

Virginischer Rosenapfel.—It is strange how a fruit may wander to distant lands, and generations after, return to its native land unrecognized. We first saw this in the nursery of the Pomological School at Proskau, and Mr. Budd declared that it must be the "Fourth of July." We then looked up the cast of the fruit in the museum, and so it seemed to be. Why should it have the name Virginia unless it had been there, and how in those early days get there except *viâ* England. Yes, we may suppose it to have been included in those importations from Russia, made during the lifetime of the late Andrew Knaight, and thence found its way to Virginia. Its name becoming lost, it was grown westward and northward in America as the Fourth of July, and returns to Russia, the land of its ancestors—even if not the land of its birth—as the Virginischer Rosenapfel.

White Koroshavka.—This is a favourite apple in the markets at Nijni Novgorod and Kazan, and is grown in fair quantity along the Volga for market purposes. It is an early apple, yet not one of the earliest: a fair sized white fruit with little marblings and stripes of red; tender, rather juicy, and so mildly acid as to incline to be almost sweet, but nice and pleasant, invariably good, and therefore better in quality than Skrute, though perhaps hardly grown in as great quantity. We find it grown largely in the villages in Kazan, and apparently quite hardy there, so that its hardiness one need not have doubts about; yet a friend at Simbirsk in a trying soil and situation finds in the long run that neither the white nor red Koroshavka are equal in hardiness to the Anis and Antonovka, yet for all that a hardy tree, and, I would say, a good summer apple, lacking neither in beauty nor in good quality.

Of the coast apples in Russia I seem to know very little. We had no opportunity of seeing them in bearing. The climate is not our climate, yet their experience is valuable. Dr. Regel selected out of a long list, forty-one kinds which he recommended, and out of these he marked ten kinds with double stars. These ten kinds are Antonovka, Aport (autumn), Borovinka, Belui Naliv, Red Summer Calville, Koritschnevoe (Zimmetapfel), Koritschnevoe Ananasnoe, Polosatoe Novgorodskoe, Skvosnoe Naliv, Skrischapfel, Titovka.

Note.—There are many other apples in the United States Department Catalogue which deserve special mention.

The Early Transparent family are very numerous. There are the white, yellow, and green Transparents, Red Duck, Sweet Pear, Charlottenthaler, and others. The yellow Transparent, 334, has been taking the place of Tetofsky, and now 342, Charlottenthaler for size and earliness, rather bears the palm.

Count Orloff, of Ellwanger and Barry (whether received from Department of Agriculture or from Moscow I cannot say), is white Astrachan, and Grand Sultan very like it; so also is 333 red Transparent, as fruited by Mr. Sias, but sweeter and with more colour.

Another family, and a very important one, is that to which 177 Green Streaked, 285 Turnipy Juicy, 971 Vassilis Largest, and 275 Zolotoreff, belong. They are all large and showy, often as large as Alexander; a little coarse in texture, but good, salable, fall market apples. No. 230 Titovka, of the Department Catalogue, seems to belong to this family. Also 378 Hibernal, which is rather later in season. The tree, too, in the opinion of Mr. Tuttle, is unusually hardy, as well as a very vigorous grower.

Of sweet apples, No. 164 Heidorn's Streaked, 178 Barloff, and 453 Beautiful Arcad, are spoken very favourably of by Mr. Tuttle. Heidorn's is a good sized, striped, handsome fruit, with a slight aromatic flavour; very good. Mr. Webster and Dr. Hoskins

think highly of 351 Prolific Sweeting, a yellow fall fruit of medium size. Tree of Tetofsky type, and a very heavy bearer.

Of dessert apples 372 St. Peter, and 304 Sweitzer are among the best. Later in season Borsdorf, Longfield, etc.

One of the latest keepers is No. 410 Little Seedling. The tree is of Duchess type and an abundant bearer of fruit said to keep well till warm weather, when it becomes tender, juicy, and of fair flavour. It lacks size, owing to its habit of overbearing.

ON FRUITS IN CENTRAL EUROPE.

Our work in Russia was an endeavour to find out what fruits had stood the test of climates as severe as our own.

In central Europe another field of work presented itself, viz., what varieties, valuable in these milder climates, are worthy of trial here?

Our journey from London onwards was a constant succession of visits to horticultural and botanic gardens, pomological and forest schools, steady, rapid work, without time even to arrange our notes.

At Verrieres, near Paris, in the gardens of M. Henri de Vilmorin, gardens full of botanic rarities, we specially noticed that the apple trees which had been selected for cordon training, included many kinds whose leaf and early terminate growth betokened northern ancestry. We noticed this, too, in the nurserses of M. Simon Louis, at Metz.

At the Jardin des Plantes, in Paris, we had a grand opportunity to study the different races of the pear,—a large collection, botanical as well as horticultural, including different races from China, from Japan, India and different parts of Europe, and their hybrids. Mr. Budd is the one man who has taken up this botanic question of races, and applied it practically to northern horticulture.

By noting certain characteristics of race one might collect in the milder parts of Europe, varieties of the apple and the pear, with the assurance that a large part of them would prove hardy in severe climates.

At Reutlingen, in Wurtemburg, we visited the pomological school of the late Dr. Lucas, so well-known to pomologists by his works and his life-long labours. At the time of our visit he was fast declining, and on our arrival at Proskau we heard of his death. From Mr. Fritz Lucas, his son and successor, we received lists and notes of those fruits which had stood uninjured during their late trying winters.

At the late Pomological School at Kosteneuberg, near Vienna, we met Prof. Stoll, who has also a thorough knowledge of the fruits best adapted to the colder and more elevated parts of Silesia and Transylvania.

At the Pomological School at Troya, near Prague, in Bohemia, we found a very large collection of fruits adapted to mild climates.

At Proskau, near Oppeln, in Silesia, is the pomological school of eastern Prussia. The climate here is more severe, its elevation is 720 feet, its soil is cold, its south winds passing over the Carpathians are cold, and, I believe, dry. Most of the tender plants we had found further south are wanting. Director Stoll finds it necessary to study the question of hardiness, and hence we find his opinion very valuable for north Germany.

At Warsaw, the pomological school under Prof. Jankouski, is doing a gran[1], good

work ; in fact the best pomological work we saw in Russia. The climate, however, of the city gardens is but very slightly more severe than at Proskau.

After leaving Warsaw, we scarcely found any tree or shrub which would be likely to prove tender in Montreal or even at Abbottsford, until, on our return westwards, we reached Kiev.

For the present, I will merely describe a few of the best late-keeping apples of Germany.

Batullenapfel Rother.—This belongs to a family almost new to us. We saw it, for the first time, at the pomological school of Dr. Lucas at Reutlingen, and were at once struck with its small, thick, plicated leaf. A singular fact, too, in regard to it, is that it grows readily from cuttings. We saw cuttings of it treated just as currant cuttings usually are, growing well at Reutlingen.

At the Kosteneuberg Pomological School, near Vienna, Prof. Stoll draws our special attention to it, and says it has been grown for at least one hundred years in Transylvania. It is of medium size, often largish, whitish or yellowish, with red sides, pretty good quality, a very healthy, hardy tree in those climates, and a very abundant bearer. At Proskau we hear further good opinions of it. Its keeping qualities are variously stated. At Proskau they say till February. At Kosteneuberg till April. At Traja they say till June.

The Weisser Batullen is said to be just like this except that it has less colour, and some think they are the same.

Baumann's Reinette.—At Warsaw, Proskau and Reutlingen we hear high opinions of this fruit. Mr. Lauche, of Potsdam, Berlin, in his Deutche Pomologie, says that its bearing, beauty and quality makes it deserving of very extensive cultivation, and says further that it is a fine grained, crisp, juicy apple, of characteristic, acidulated, spicy flavour. A valuable apple for family use, in season from January till March or May, but too small for market.

Bohnapfel Grosser.—This has been long grown by the peasants of the Rhine and in Wurtemberg, yet Mr. Lucas does not mention it among his favourite kinds, probably from its lack of fine quality. It has the same thick, plicated, pubescent leaf as the Batullen, and would seem of the same race, and like it unusually productive. It is valued for drying, baking, and cider. It is a medium-sized apple with a red side, harsh and sour until spring, when it becomes sweeter, but without aroma. Its long keeping and heavy bearing alone merit its extensive cultivation.

Boikenapfel has been long known in the neighbourhood of Bremen, long grown and highly esteemed, and has been well recommended for general cultivation in Germany.

It has a snow white, firm, fine grained flesh, good fair size, though mostly green in colour. An excellent table apple for family use, in season from January till June.

Champagner Reinette.—A little dessert apple of rather fine quality which has been planted rather largely, says Mr. Lauche, in Germany since 1857, when it was recommended for general cultivation. It keeps till June. Dr. Stoll, at Proskau, gave us a specimen on July 28th. The tree, I fear, is not quite as hardy as some others. At Riga, not at all hardy. This, therefore, cannot be the Champagnskaya Pipka we heard of as hardy and

valuable at Orel and other places in central Russia. Mr. Shroeder described a Champanskoe as a rather large, flat conic, greenish yellow apple somewhat striped. A winter fruit of very fine quality and a hardy, though a crooked growing tree.

Danziger Kantapfel has been growing, says Mr. Lauche, in Germany and Holland under many names. "A fine-fleshed juicy apple of aromatic, acidulated sugary flavour." A valuable home-use table fruit that keeps till January.

Gulderling Langer Grüner.—A largish green apple tinged with red, grown in quantity in Silesia. It keeps till May and is then a fairly good eating apple. Earlier in the season it is too acid.

Grüner Fürstenapfel, (Green Princes' Apple), is grown largely about Hanover and Berlin, in Pomerania, and on the Rhine near Coblenz, and in cold districts among the Carpathian mountains; a small or medium-sized green apple that keeps till May or June, and, though lacking beauty, yet very productive and, therefore, largely grown. The tree seems hardier than some others.

Landsburger Reinette.—A rather large yellowish fruit with dull red sides, second quality or almost first, some say, for table; it bears abundantly, and keeps till January or, some say till March. Mr. Goegginger says not hardy at Riga.

Muscat Reinette.—This is one of the best of the German apples. It is highly prized and largely cultivated in Germany, Holland and France. It is a medium-sized yellow fruit, splashed with red, distinguished by its strong aromatic and sugary flavour. It keeps till spring. The tree is hardy in north Germany, but, Mr. Goegginger tells me, not at Riga.

Purpurrother Cusinot.—Prof. Stoll, of Kosteneuberg, tells me that this tree is grown in very large quantity in Bohemia and Silesia, and is said to prove very hardy and productive in the colder parts of these districts. Oberdick called attention to its wonderful productiveness, says Mr. Lauche, and since then it has been recommended in Germany for general cultivation. A dull red fruit of medium size, of a slightly cinnamon, sugary flavour. It is in season from December to May, and is said to be "the" apple of its season in some of the German markets. I regret to say that Mr. Goegginger has found it not hardy at Riga.

Stettiner Gelber.—This is said to be a finer and preferable apple to the Stettiner Rother. It is a medium-sized, sometimes largish apple of good quality that keeps till spring and is grown largely for markets in some districts in north Germany. A specimen of it was given to us to taste, by Dr. Stoll, at Proskau, on July 28th; of course at that late date it had lost flavour.

Stettinger Rother has been grown somewhat at Warsaw, and in great quantity in the north-eastern Baltic provinces of Germany, whence it is shipped up the Vistula, and is the commonest apple in the Warsaw market in March and April.

Winter Citronenapfel (Citronat).—At Kiev, where it is slightly colder in winter, and where the winter changes are more extreme than at Warsaw, this is considered their best winter apple, next to Antonovka. Such was the decision of four members of the Forestry Association, residents of the Government of Kiev, who consulted together and gave this as their decision to Mr. Budd at the Forestry Convention at Moscow.

It is a large red apple, yellow only in the shade, a fruit of high quality, that keeps

till March. It was not mentioned at Proskau among their best winter apples, but is a great favourite at Warsaw, especially for home use, for its tender flesh does not bear distant carriage. It did not seem hardy at Kursk, yet, like many of these German apples, valuable where the climate is not too extreme.

PEARS.

It may be a cause of surprise when I say that a pear is the best tree I know of for maintaining a dark, glossy, healthy foliage when planted on dry soil, in a climate where the summer sun is hot, the nights cool, the air excessively dry, and the winters very cold. Yet such is the case. In the public square at Simbirsk, in latitude 54°, on the Volga, a climate as severe as the city of Quebec, the wild pear is a fine ornamental tree, and seems *the* tree which suffers least from dryness of air and diminished rainfall. I must add, too, that the one tree of largest diameter of trunk which I happened to see during a journey of nearly 1,000 miles on the Volga, was this wild form of pear; a tree at Saratof, nearly three and a-half feet in diameter of trunk, measured near the ground.

At Simbirsk it was that we first met with extensive pear culture in extreme climates. Here there must be in orchard, I should think, 10,000 trees, and those mainly of two wild forms—one a Bergamot, usually about the size of the cut, or somewhat smaller, usually sweetish, perhaps with slight acid, usually lacking in juice, sometimes very slightly astringent and fair for cooking; sometimes very rough and quite unfit for cooking. The tree is a good upright grower, and its dark glossy foliage is very ornamental. Mr. Budd picked a leaf off thirty trees, and really could not distinguish one from another. The leaf is smooth-edged, with scarcely a trace of crenation.

WILD BERGAMOT OF THE VOLGA.

The other wild form of pear found on the Volga, bears a small pyriform fruit, which it yields in quantity. Sometimes it is fit for cooking, but usually too astringent. It also is a fine tree. Its leaves are serrated. These two wild forms promise to be of great value to us, as the stocks upon which to graft our future pear orchards. These pears should be grown, if for nothing else, to produce seeds for growing hardy stocks, for it is an undoubted fact that a hardy stock increases the hardiness and early maturity of growth of that which is grafted upon it.

In Poland we find another wild form of pear, a common tree and a tree of large size. The leaf is fine in texture, though not very thick, and sharply serrated upon its edges. Its foliage is not as well adapted to a very dry climate as that of the Volga pears; nor is the tree as hardy, yet hardy enough for a good stock for our climate, and, for this purpose, it should be imported into this country in large quantity from the Warsaw nurseries. We saw the wild pear growing in quantity between Kharkof and Kiev, but whether this same race or not I cannot say.

NOTE.—Mr. A. Faller, of Minneapolis, who lived some years on the Amur, described to me a pear, grown in that region, just like this wild Volga Bergamot. He also mentioned a large green pear the size of the Bartlett, quite uneatable when picked, but after being kept three months very juicy and very nice. This must be a form of the Pyrus Ussuriensis, the wild pear of the Ussuri branch of the Amur.

At Reutlingen, in Wurtemburg, we find the perry and cooking pears to be of a different race from these of western France, whence American nurserymen have obtained their pear roots. Reutlingen is a fruit-growing neighbourhood, and, on account of its elevation, cold above its latitude. The orchards, here, have suffered severely during the last unfavourable winters, but these pubescent-leaved pear trees have stood the test much better than the apple.

Tonkovietka.—This I will speak of first, as it is the hardiest pear tree I know which bears an edible fruit. In Moscow the severe winter of 1877 killed all the pear trees in the college grounds to the snow line. This, however, seemed about the hardiest —hardier, even, than Bessemianka. We find trees of what is said to be it in some peasant orchards in the cold climate of Tula, 120 miles south of Moscow. We again hear of it at Simbirsk as a pretty good pear that bears well. Mr. Shroeder, who looks at fruits from a high standard of quality, says it is a fairly good eating pear, but not equal to Bessemianka. The Tonkovietka shown to us at Saratof was not the same; a larger and better fruit, but tree not hardy there. The name means slender stalk—a name which possibly may be applied to more than one pear.

Bessemianka is known also by the German name of Kernlose, which means without seeds. It is by far the best pear grown in the severer parts of Russia. At Moscow it suffers during winters of extra severity, yet, in sheltered places, it sometimes does pretty well. At Tula they say it stands their usual winters; now and then they have a winter when it is not injured. There we saw a number of trees looking quite healthy. It is "the" pear tree there, and yet they say not as productive there as it is fifty miles further south. At Simbirsk it is considered not quite hardy. It grows for about ten years, bears fairly, and is injured or killed by some severe winter. At Saratof, we find trees seven or eight inches in diameter of trunk, which appeared quite hardy, and said to bear good crops. We find an orchard here of 500 large pear trees, all but one variety in good healthy condition, and this in a climate as cold as the city of Quebec, and so dry that irrigation is necessary for profitable orcharding. Here the Bessemianka was considered one of their best.

BESSEMIANKA.

Again, in central Russia, at Orel we find a great many trees, both young and old, and find it considered the best because the most reliable.

The same story at Voronesh. At Kursk, in the peasant gardens and nurseries near the town, we see large old trees of it: we see large numbers of young trees, and a large supply of it in their little nurseries.

It is the most widely known, and the most largely grown pear in central Russia.

The tree is an upright grower, has large, dark, thick leaves, but very slightly crenated, almost smooth-edged, a leaf that stands aridity of air well. One fault this tree has, its branches easily break off from weight of snow, and thus often leave large scars upon the trunk.

The fruit is green, with some russetty brown, tender, rather juicy, gritty at the core, with few or no seeds, quite free from astringency, mild and pleasant, though not to say buttery. Season, I should think, early October.

Bergamot.—Of this family I will speak next. In the markets on the Volga below Simbirsk, we find a small, round, early Bergamot, but it rots at the core so badly that I cannot recommend it. There is, however, a large winter, or rather fall Bergamot, worthy

AUTUMN BERGAMOT OF THE VOLGA.

of trial, and perhaps this may be the Bergamotte Osenii of Regel. At Simbirsk we saw eight or ten trees of it, about four inches in diameter. At Khvalinsk and Saratof we also saw healthy old trees.

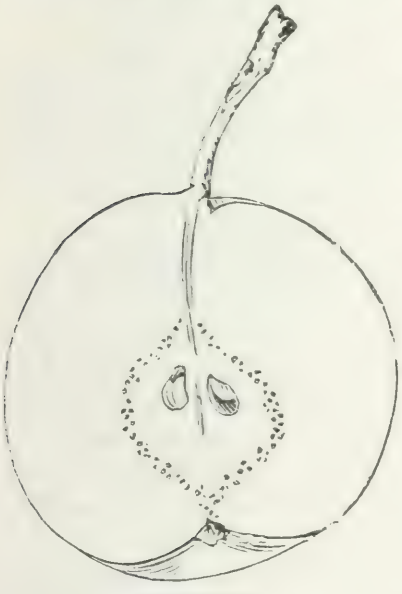
The fruit is green, with tendency to a little colour on one side, and on an average it is about the size of our Fameuse apple. The flesh is sweet, rather lacking in juice, but quite free from astringency. It has a tendency, though slight, to rot at the core; but if picked carefully and early, it may be kept into winter.

At Warsaw, we find in the market in fair quantity, a small, round pear, which, on

enquiry, we are told, is the *common Bergamot*, and that there are large old trees of it in exposed situations near there. We also saw large healthy trees of it in the Warsaw gardens. It is an autumn pear of very much finer quality than that grown on the Volga, although the tree has not been tested in as severe climates, nor does it show the same hardy, wild character.

NOTE.—Whether any of the Bergamots I describe are the same as those sent out by Dr. Regel I cannot say. The St. Petersburg and Moscow collections are growing side by side at Ames, and light will be thrown upon their identity or otherwise. Bessemianka, if I remember correctly, appeared true to name, from several different sources. Tonkovietka is apt to be true to name. Rothe Bergamotte and Bergamotte Rouge, from different parties in Warsaw, proved not alike at Ames. Also the Russian pears fruiting in the Pomological Gardens at Warsaw, do not altogether agree with my notes from Moscow. I fear a good deal of confusion in this matter.

Sapieganka.—This is the Bergamotte ronde d'été, introduced, I believe, from Italy, about the 15th century, and named after a Polish nobleman. There are a good many trees of it about Warsaw. I am told that in one garden not far from the city, there are 185 old trees, of which the largest are two feet in diameter of trunk.



SAPIEGANKA.

At Vilna, where the climate is more severe than Warsaw, we saw ten or twelve old trees about one foot in diameter and one two feet. At Riga, some say "as hardy as an oak," others say pretty hardy. At Voronesh, Mr. Fischer spoke strongly of its hardiness there, although I have forgotten if we saw any trees there. At Orel it has not proved hardy. The verdict generally is a hardy tree and a long-lived healthy tree and a good fruit, but not capable of bearing quite as low temperatures as Bessemianka.

Red Bergamot (Rothe Bergamotte, Bergamotte d'automne, Leroy).—From the engravings of this pear given in Lauche's Deutsche Pomologie, it is a query in my mind whether this may not be the common Bergamot I have spoken of above, as growing about Warsaw. At any rate I saw one fine old tree pointed out as this Bergamotte Rouge, and was told there were many more like it in the neighbourhood. Our attention was first directed to it by Mr. Stoll at Vienna, and we learn that it has been grown largely in Silesia, and somewhat in Sweden. It is spoken highly of at Proskau and Riga, and is a pear of fine quality, recommended for all kinds of soil. It ripes in September and October, and is well worthy of trial.

Moskovka probably deserves mention, a small pyriform pear, jucy, mild and non-astringent. We saw a good many trees of it at Simbirsk, large old trees, some of them somewhat injured, yet some thought it hardier even than Tonkovietka. A good, little, early, cooking fruit.

Of pears without names I will next speak. If the fruit is long in shape it is called Doula, if small Grusha. Another is named Dolgostebelka, which means long stalk, but as all the Russian pears except the Bergamot have long stalks, such names have no individuality. Under the name of Gliva, which is akin to Doula, we find great variety; one which I tasted at Moscow, and which I was assured was grown there, was as rich and buttery as a Bartlett. At Orel, under the name of Doula Doukavoya, we find good healthy trees bearing a large, but uneven-sided, very sweet pear, juicy, and very nice. The same tree we saw at Simbirsk; the same unmistakable fruit again on the Bogdanoff estates, near Kursk. A valuable pear for cold climates.

Bezi de la Motte (Wilding Von Motte).—In Iowa, it has been stated by Swedes, that this pear grew far north in their native land. At Burlington, Iowa, Mr. Avery has been very successful in growing what he called the Crassane Bergamotte, a pear known at Warsaw and in the Baltic Provinces, but said there not to be very hardy. It would now seem that Mr. Avery's trees are, as Mr. Downing has positively affirmed, the true Bezi de la Motte.

The fruit is medium, sometimes large and tolerably round, buttery, melting, and of delicate sweet flavour. Mr. Goeschke, of Proskau, in his book, "Der Obstbau," says, a delicate dessert pear, but needs good soil, sheltered position and favourable weather to bear well. It ripens about 18th October, and keeps a long time. At Burlington, Iowa, this variety is promising, yet must not be ranked among the ironclads.

Delices de Jodoine.—In the Pomological Garden at Warsaw, we find one tree of this variety, erect in growth, leaves very dark in colour, thick, pubescent, and in fact just like some inferior, but hardy Doulas and Glivas planted along side of it. The fruit, says Dr. Hogg, of London, in the "Fruit Manual," is three inches long, and the flesh is "half-melting, sweet, sugary and aromatic." All authors agree that the fruit is good. The foliage of this tree will not suffer from aridity of air; if of early maturity of growth, then a tree of decided hardiness. This tree is well worthy of a trial in the north.

Confessels Birne is a tree with a large, close-textured leaf, grown in quantity in the colder parts of Silesia where the thermometer goes down to 20° and 22°. The quality of the fruit I do not know. I only know that it is grown chiefly for drying.

Fondante de Bois (Holzfarbige Butterbirne).—This pear we saw bearing heavily in the garden of the Pomological School at Warsaw, and in other gardens in the neighbourhood; also in the colder climate of Wilna. At Warsaw it is one of the few that have stood the test of trying winters, and one of the best for planting in open exposure.

Fondante de Bois is a synonym of the Belle de Flandres, or Flemish Beauty. In the catalogue of the Royal Horticultural Society of London, published in 1842, it proved so. Another pear, however, introduced from the continent, proved different, and yet the description of it is not like this. Different climates work wide differences in the appearance and quality of fruits. Still, Mr. Budd says, surely not Flemish Beauty or anything like it. I, too, have known the Flemish Beauty in different climates, have grown it in quantity in southern Pennsylvania in a garden I once owned there, have eaten some bushels of it in my lifetime, and cannot believe it to be the same as this Fondante de Bois. Considering the value of this pear in Poland it ought to be introduced.

Grumkower Winterbirne.—This pear has been long known in eastern Prussia, and about eighty years ago was sent westward, and in 1857 was recommended for general cultivation. It is spoken well of at Warsaw as a tree that has stood the test of trying winters, not merely in the sheltered city gardens, but in exposed places. It is a long pyriform pear, green, and mottled light and dark, with but slight colour ; the flesh is tender, buttery, but somewhat lacking in sweetness, not equal to Flemish Beauty I would say. It is in season in October and November, and the tree requires moist soil.

Liegel's Winterbirne.—This, I am told, has been planted very largely in the colder parts of Bohemia, among the mountains, where it has become a large export product. It is sent in large quantity to Berlin as a winter dessert pear. It is, said Mr. Lauche probably of Bohemian origin, and in 1853, at Naumberg, it was recommended for general planting. It has fine-grained, melting flesh, of agreeable, and somewhat spicy flavour, and is in season from November to January. It has not yet been planted outside Bohemia as largely as it deserves.

Leon Gregoire is another of about equal hardiness. It is hardier than Zepherin Gregoire, which is one of the hardiest of its class. Mr. Lauche says it was grown in Belgium by Xavier Gregoire from seeds of Napoleon, and says it is melting, rich in juice, and of an acidulated, sweet and slightly spiced flavour. A good sized pear of fair quality which keeps till November, or later.

Pasovka is one of the hardy Polish pears, long known and planted to a fair, or rather, large extent. The fruit is long and narrow, yellow, often with a red side, of fair size, very pretty, pretty good quality, and very good for cooking. It ripens in August.

Pound Pear (Pfundbirne. Funtovka).—There are many pears of this class. At Riga, the nurseries speak of the Pfundbirne as a hardy and productive tree, which bears a large, green cooking fruit, in season in September and October.

Salzburg.—We were struck with the healthy growth and thick leaf of this tree when we first saw it in the Pomological Gardens near Prague, in Bohemia. At Proskau, Director Stoll kindly drove us to where it had been planted as a roadside tree ; large, healthy, upright trees.

However, as we follow northward, we find this tree is not as hardy as others. At Riga, it is somewhat tender ; at Warsaw, it has been grown a good deal, yet it suffers at times. It is a pear of medium size and rather fine quality. The tree is possibly hardy enough for a sheltered city garden in Montreal, but is more likely to be of use in climates like Brockville, Kingston and Toronto. It is said to be a pear of fine quality.

Sugar Pear (Zucherbirne, Zaharna, Saharnaya).—Under these names, which mean the same, we find many varieties of a healthy, hardy race, well worthy of trial. Wurtemberg, Warsaw, Riga, Orel, etc., all have their sugar pears. They are usually productive, fair quality for eating, good for cooking, and would be very salable upon our markets.

CHERRIES.

The cherries of northern Europe best adapted to severe climates belong to a family which is scarcely known upon this continent. I will describe a few of those that have been found of greatest value at the north.

Vladimir.—First in importance are the cherries known all over Russia under this name. Like the Ostheim and the Brune de Bruxelles, they are usually bushes rather than trees, and have narrow, small, but finely textured thick foliage. It has been named Vladimir, I suppose, because in that government its culture has attained such vast proportions. The fruit we saw not only in the markets, but sold in the streets in all the larger towns, where the consumption of this cherry is very large. We did not visit the cherry districts in Vladimir, as the crop had been already picked and marketed when we arrived there. We tried, however, to get some estimate of the extent of its culture there. Are there 10,000 trees? I ask. More than 100 men have 15,000 each, and such was the tenor of other statements from those who know the country well. What is the amount shipped? I ask. In reply I am told that entire cars, and in some special instances, entire trains have been loaded with this one product. At the village of Viazniki the chief industry of the neighbourhood is cherry culture. We find it in all the northern markets in great quantity. It seems to be cut off the tree with scissors, leaving about an inch or less of stalk attached to the fruit, and thus picked it stands carriage well, and then keeps for some little time after arrival.

In the peasant villages in the government of Kazan, and in all the towns we stayed at on the Volga, wherever a peasant had any apple trees, he was sure to have also a patch of this Vladimir cherry, sometimes carefully thinned, seldom in a high state of culture, and often grown into a thicket; everywhere it was grown in fair quantity, and in all the markets, though past its season, a few were still to be found. Again in central Russia, everywhere it is the most largely grown variety, the popular market variety, although at Voronesh and Kursk, we find fruits more of the Guigne type, not quite hardy, yet bearing finer fruit. As far south even as Kharkof and Kiev it is the popular kind, and in the more southern climate of Kiev, still retains its dwarf habit of growth. In one garden there we saw it planted under plum trees, just as currant bushes in city gardens often are with us.

The tree, if I may so speak, is of bush form, and when it becomes too old to bear profitably, the older parts are cut away, and new sprouts take their place. It is usually grown in sod, and under such lack of culture brings good returns, hence its great value to us as a tree for careless cultivators. It can be grown from seed, as it often is, but as it varies somewhat, it is better to propagate from the best by sprouts. Sometimes, though rarely, it is grafted. Some trees are erect in growth, others weeping; both forms are widely scattered. The weeping is usually considered the best, but not invariably so. Some have red flesh, but as a rule the flesh is deep, purplish red; the skin, when fully ripe, a reddish black, and when fully ripe, almost over-ripe, a rich mingling of acid and sweetness. When quite over-ripe it loses its acidity, and combines with its sweetness somewhat of the peculiar but pleasant bitter of the commoner kinds of Guigne.

If the cultivation of this Vladimir cherry proves such a profitable industry to large

numbers of people in Russia, in a climate as severe as the city of Quebec, why might it not prove equally profitable in like climates here? It certainly should be introduced, and that in quantity for immediate trial; and if successful there is no reason why we should not have several Canadian Vladimirs, with their millions of cherry bushes, and their canning establishments, and good cheap cherries in all our markets.

Ostheim (Ostheimer Weichel).—I am told by Director Stoll, of Proskau, that this is a native of the Sierra Nevada mountains in Spain, where it was found at elevations of 5,000 and 6,000 feet, and that it was brought to Germany in 1687 by a German Professor, whose name is known, though I cannot give it, and who grew it in the neighbourhood of the town of Ostheim, whence its present name. Those who assign to the cherry an oriental origin, and cite Pliny that it did not appear in Italy until after the defeat of Mithridates, King of Pontus, in B.C. 65, hold that it must have come to Spain from the East, but this is mere conjecture. In foliage, and in habit of growth, it is much like the Vladimir, and must be nearly related to it. In Germany it has been largely grown in some places for the manufacture of cherry wine, or cherry brandy, and it seems strange that a cherry, so largely grown there, should be almost unknown on our continent. In the catalogues of Canadian or United States nurserymen, it is not to be found. However, Mr. E. Myer, a German colonist, who settled in Minnesota, at St. Peter, about fifty miles south-west of St. Paul, brought with him the sprouts of this cherry, which have been fruiting in that severe climate. (See Iowa Horticultural Society's Report 1881, p. 371.) In colour the Ostheim is like Vladimir, a dark red, becoming, when very ripe, a dark purplish red. When we tasted it at Warsaw, we found it but mildly acid and rather rich. Dr. Hogg says; "Flesh very dark, tender, juicy, with a pleasant, sweet and subacid flavour." M. Goeschke, in *Der Obstbau*, says: "An excellent, agreeable, sweetish-sour flavour. A first-class dessert fruit, and particulary in demand for preserves." M. Simon-Louis, in his *Guide Pratique*, says: "De première qualité à perfaite maturité," and "extraordinairement fertile."

There seems no doubt as to its hardiness, productiveness or quality, and like the Vladimir it is worthy of extensive trial.

Brune de Bruxelles (Brüsseller Braune. Ratafia of Hogg).—This is another of dwarf habit of tree, and like foliage. The fruit is large, what we saw, I might say, very large, but it was upon a young tree bearing one of its first crops. It is dark brownish red in colour, and a rich acid, which tones down but little except when over ripe. On account of its large size and good colour it sells in the Warsaw markets at one-fourth more than Ostheim. The tree is hardy, but not as hardy as Vladimir or Ostheim.

Double Natte (Doppelte Natte) is another often recommended to us. It is, I think, of similar foliage, but not quite as hardy as some others, and yet reported hardy at Orel. Usually not a heavy bearer, but very delicate in flavour, and a great favourite with many.

In central Russia we find many varieties superior in fruit, though not so hardy nor such reliable bearers. At Tula, varieties known as the rose, white rose, dark rose, black and white Spanish are recommended; and yet the query suggests itself whether they may not have been planted on an incline and bent down as the Reine Claude plums are. At

Voronesh, many have been selected, but not under known names. Among them the Proseratchnaya Rosenia, a rosy cherry of transparent type, propagated by grafting. At Simbirsk we hear of a cherry almost black, and larger than Vladimir, known as Roditelskaya. At Khvalinsk, a cherry known as the Turkish, seemed hardy, and said to bear very large fruit.

Among the cherries grown in Russia, at Kursk and Voronesh, and southwards, we find trees whose foliage would appear to be crosses between the Griotte or sour cherry, and the Guigne or sweet cherry, of heart or bigarreau type. As a class they are not equal in hardiness to Vladimir or Ostheim; yet most valuable in climates of moderate severity.

Of other German cherries, I would mention Szklanki, or Glaskische doppette, a Polish seedling, said to be a hardy and good bearer, of fruit the size of Ostheim, and much like it in flavour, but red in colour, and with yellowish flesh. Leigel's Früh Weichel, a fair-sized tree of Ostheim foliage, dark purplish skin and flesh, and much of Ostheim character. The Kleparovska, another Polish cherry, from Gallicia, near Lemberg, has proved very hardy at Warsaw. Shatten Amarel, a large dark red cherry of mild flavour, and of Ostheim foliage. A short stalked Amarel, of which I cannot give the proper name, which is coming into great favour about Berlin and other places. Amarel Tardive, a weeping tree of Ostheim leaf, dark purplish red, and somewhat acid. Rose Charmeux, a large, red, delicate, watery, mild flavoured fruit. Lutovka, a large, good, yellow fleshed, red cherry, and a hardy tree.

In the German or Amana colonies on the Iowa River, in Johnson county, Iowa, colonies which moved to their present place from the State of New York, Mr. Budd tells me that there is grown in quantity, in each of their seven villages, a variety of the bird cherry, which bears young and abundantly a fruit which they value for cooking. It has thick, dark foliage, and pendulous branches, and does not sprout after it commences to bear heavily. The fruit is about as large as a good-sized black currant, with a stone no larger than an ordinary bird cherry. It is a pleasant acid, rather too acid to eat raw, but so valued for pies as to be grown largely.

Dr. Hogg, also, mentions a variety of the native Cerasus vulgaris, under the name of Peramdam, which has been grown in one place in Lincolnshire for two hundred years or more. Dr. Hogg has himself a tree of it one hundred years old, and yet not more than seven feet high. A small round fruit, half an inch in diameter, pale red, and of agreeable lively acidity. Its hardiness, of course, I know nothing of.

Our wild red cherry, or pigeon cherry (*Prunus Pennsylvanica*), has been recommended as a stock for the cultivated cherry. If suitable, certainly no stock could be hardier or more readily procurable. Botanically, it is said, of all our native species, to be that most nearly related to the European cherry. We are greatly in need of a hardy, cheap stock. The experience of Mr. W. G. Waring, of Tyrone, Pa., as given in Report of Iowa Horticultural Society, 1880, is very encouraging.

What I would urge in this matter is the introduction in quantity of the Vladimir and Ostheim into this country for extensive trial.

PLUMS.

In all our most northern rambles in central Russia, we find the plum grown in fair quantity, and supplying a certain amount to the local markets. In the severe climates of Moscow, Vladimir and Kazan, we find plums, and some of them are of really fine quality: and we are told that in the village of Gorbatovka, forty miles from Nijni Novgorod, they are grown in large quantity for the Nijni and Moscow markets. These plums belong to a family more or less nearly related to the Quetche or Prune plums of Germany and Hungary. Like the Vladimir cherry, these northern forms of the plum are dwarf in habit of tree, often bushes, and this seems to be a provision of nature; for, in these cold climates, if a plum bush is killed to the ground new shoots soon grow and bear. Of these plums there is great variety; some are red, others yellow, but mostly blue; they differ widely in flavour, some I would say, equal to Lombard, some are early, some late; they are usually without any astringency of skin, and usually free stone. I was not prepared to find such plums in the cold climates of Russia. The improved varieties of the wild plum of the north-western States, I had expected to be the future plums of the Province of Quebec. I have some of them, heavy and reliable bearers, but of medium quality only. There are much better varieties than those I have, for instance, the Desoto and others; yet, these non-astringent, fleshy, free stone Russians, have a combination of good qualities which entitle them to extensive trial in our cold country. I would say, however, that they will prove as easy a prey to the curculio as other European kinds, while the North-West Chickasaw, though not too thick-skinned to prevent puncture, is, as Mr. Budd observes, so juicy, as usually to prevent the inserted eggs from hatching.

These Russian plums are grown, no doubt, sometimes from stones, but usually from suckers. Most of the horticultural gardens or nurserymen have made small collections of the best they have found. By thus obtaining roots of the best, from a number of points we may, more or less, get the best of these Russian seedlings.

One of the commonest in the northern markets is a long, dark, dull red, prune-shaped plum, tapering toward the stock, not rich, but non-astringent, and a really good cooking fruit. The Skorospelkaya Krasnaya, at Petrovskoe, is said to be about the best of these red kinds, and the tree one of the hardiest, but season a little later than some other red. Mr. Shroeder has six kinds he recommends, three of which we saw in fruit, but before they were ripe. The Volga valley, too, has its plentiful supply of plums. Especially at Simbirsk, we find them in great quantity and variety. At Voronesh, Mr. Fischer specially recommends the Moldavka, a large violet plum, not to say juicy, but of medium quality, rather a large tree, grown from suckers, and found to be very productive; I counted 150 plums on one branch. Here, too, we find the Yellow Egg, whether our old Yellow Egg or not I cannot say; tree seemingly hardy, but either from want of proper ripening of wood, or from some other cause, not a good bearer.

At Tula, we find quite a variety in the peasant orchards, and among them Reine Claude. Yes, in Russia, we find a family of Reine Claudes, red, white, and blue; and Mr. Lauche, in his Deutsche Pomologie, describes such varieties. They are of very fine quality, extra quality, but in the cold climate of Tula, they are planted at an angle of forty-five degrees or less, and bent down to the ground before the snow falls. Thus protected by a

covering of snow they often bear bountifully. When too old to bend down they are allowed to take their chances, often bear a crop or two and then die. A whitish plum, known as the white Hungarian, has also proved successful, as well as the white Otschakovskaya and the white Vengerka. At Orel, we find a collection of the best under names which mean large blue, large yellow, etc. At Kursk, we find the Reine Claudes planted more freely, but unless laid down, they are not reliable, though they may sometimes bear a good crop in the sheltered peasant gardens around Kursk. At Kiev, we find more of the German and French varieties, and, therefore, notes from that climate are less valuable to us.

The Prunus Spinosa, of Russia, is very interesting, and quite common as far north as any other plum. The peasants always said it was not a plum, but called it by the Russian name for thorn. There is a large fruited variety of it, round, blue and really good for cooking, far better than our Canadian wild plum for that purpose. We saw it bearing heavily in many places.

A dwarf variety of the Spinosa should be introduced into our gardens as an ornamental curiosity. The fruit is quite small, blue, covered with a bright blue bloom. I have seen it for sale in the markets, but fear it would be very sour. The bushes are seldom more than three feet in height, and I have seen little round-headed bushes, not more than eighteen inches in height, loaded with lovely blue fruit. Strikingly curious and beautiful.

APRICOTS.

Let us add the Apricot to our list of hardy fruits as soon as possible.

Mr. Maximowitch, Curator of Botanic Gardens at St. Petersburg, who has spent many years botanizing that vast country eastward to the Amur, says that in Soongaria, in eastern Turkestan, at the eastern end of the Altai range, it is growing in quantity, and that the boars, and the bears, and the natives, fight it out as to who is to have the fruit. The fruit is small, that is, about one inch in diameter, but sweet, and pretty good.

In the southern parts of the province of Mantchuria, there is, says Mr. Maximowitch, a variety of apricot different from those in cultivation. They do not thrive well near the coast, but in sheltered situations inland they grow in great quantity. They are really good, and are sold in quantity in the Pekin market. Could we not get the pits of this apricot expressed to us by our Consul at Pekin? Surely this might be done.

CURRANTS.

The Ribes Alpinum of Siberia we tasted at Moscow. A fruit of ordinary size, a rich carmine in colour, and quite sweet, with a very slight bitter. Worthy of introduction.

GRAPES.

There are large vineyards on the Don, and in the Crimea, and in other parts of southern Russia, which we did not visit. Good wines are made in these vineyards, and the grapes sent to the northern markets are very fine and mostly of Chasselas type. The vines, however, have been imported from Germany.

MULBERRIES.

We did not succeed in finding the Russian mulberry in the colder climates. At Voronesh, in the Botanic Gardens, we saw two varieties in bush form, one of which was like the Russian mulberry. M. Tartarica we saw in the Botanic Garden at Vienna, fourteen inches in diameter of trunk, and twenty-five feet high, showing that it attains to a good size

The Mennonites in Manitoba brought their mulberry from the shores of the Sea of Azof. They have grown it as a hedge plant, but it is not hardy there. In Cottonwood county, Minn., it has been planted in great quantity, and does well in that climate. Mr. Maximowitch says there is a hardy Mongolian variety, which, however, may be difficult to get. Mulberries are very plentiful in Amur, of good size, and of good quality, so Mr Faller, of Minneapolis, tells me.

MELONS.

Russia has long been celebrated for its melons. The best we saw belong to types we have not.

Musk Melon.—In the markets we used to find a melon about fourteen inches long, netted, the flesh very deep, and a creamy white in colour, and of the highest quality. I call it a musk melon merely because I do not know what else to call it. Those who abstain from musk melon are not likely to object to these. Like the Khiva melons, which one of the Emperors of China always enquired about on the arrival of the caravans, this is a keeping melon, and may readily be kept till Christmas. It may be a little late in ripening. However, on September 2nd we found fine specimens in the Simbirsk market, said to be grown on the lower Volga, probably at Tsaritsin, Sarepta, or Astrachan. In the Kursk and Voronesh markets we also find them sent from the south. These melons are grown in Russia, where the summer is longer than ours, yet not with such hotbed care as we can give them, and they seem to be picked early. They cannot, therefore, be so very late. Next autumn will test their value in this climate.

Water Melon.—Nearly every barge that is being towed up the Volga has somewhere a small deck load of water melons. In all the markets we find them in great quantity. They are a great staple article of food. They are all alike, round, about ten inches in diameter, a creamy white in colour, with red flesh, and of fine flavour. Those who have grown the Russian netted cucumber alongside of the finer English frame varieties, may have noticed the hardy take-care-of-itself character of the Russian plant. Just such a hardy nature I expect to find in this Russian water melon. It grows without care in vast quantity, apparently as readily as pumpkins do with us, that is at Saratof and southwards. At Kursk and Voronesh it is not quite so large. It is a melon of fine quality likely to do well in the hands of not very careful cultivators.

FINIS.

Our journey to Russia has shown how necessary such a journey was. It has set us upon the right track, and will greatly hasten the introduction and dissemination of the best of the Russian fruits—a matter to which all our northern horticulturists were so eagerly looking. We have but broken ground; the work will continue by importations, by correspondence, by the interchange of seeds and scions.

It was so fortunate, too, that Mr. Budd was himself able to leave his college duties for so long a journey.

Every useful point of knowledge gained will be utilized in Iowa. All promising varieties will be fairly tried in different localities, the most promising scattered broadcast as soon as possible. The other north-western States will soon take action in the matter. Ontario will do something especially for her colder districts.

When will our own Province (Quebec) have a propagating centre, where the fruits adapted to each county may be propagated and distributed to each county, as prizes by the county agricultural societies.

The action taken by our Provincial Government will be an accurate test of the interest taken by our Government in the people's welfare.

REPORT OF THE COMMITTEE CHARGED WITH THE OVERSIGHT OF FRUIT AND FOREST PLANTING AT THE AGRICULTURAL COLLEGE, GUELPH.

To the Honourable the Commissioner of Agriculture:

SIR,—The Committee of the Fruit Growers' Association of Ontario, appointed to direct the operations in Horticulture and Forestry at the Ontario Agricultural College, Guelph, beg to submit the following report:—

The past season has been a favourable one for the growth of newly planted trees, and these, as well as those planted in former years, have made good progress.

Additional varieties of apple, pear, plum, cherry, grape, and small fruits, including many of the newer sorts of promise, were procured for the purpose of enlarging the plantations, and besides this the few vacancies have been filled.

The orchard, vineyard and small fruit plantations are now so far completed that in future little more will be needed than the procuring of such of the newer varieties of fruit as may be likely to succeed; and since horticulture is making very rapid progress, the addition of many trees and vines should be made annually, in order to keep pace with such desirable introductions.

HARDY RUSSIAN FRUITS.

Recognizing the importance of procuring fruits adapted to the colder regions of our Province, so that settlers there may avail themselves of the advantages of such introduction, we have placed ourselves in communication with horticulturists in several of the northern fruit-growing districts in Russia, and, with the aid of Mr. Charles Gibb, of Abbottsford, P.Q., and Prof. Budd, of Iowa, who have recently explored those regions, we have been enabled to make selections, and have ordered many varieties of apple, pear, plum, and cherry, which promise to be much hardier than any of those we now have in cultivation.

We confidently expect that these hardy sorts will succeed in Muskoka, Algoma, and other northern districts in this Province, and thereby the comforts of the settlers in those districts will be increased; and with the introduction of such suitable fruits, the attractiveness of these localities for settlement will be greatly increased, and the value of the lands enhanced. These fruits will be grown on the College farm, and propagated there, so that they may be available for planting in those districts to which reference has been made.

EXPERIENCE OF THE PAST SEASON.

The fruit and ornamental trees, vines, and shrubs, endured the winter well, and have made a good growth this year. The raspberries, currants, and gooseberries yielded a good crop of fruit, but the strawberries, although at first promising, were considerably injured by late spring frosts, and the anticipated yield considerably lessened both in quantity and quality. The grape vines have made a good growth, and have now become so well established that they will require to be trellised before another season.

ARBORETUM.

The plan of the grounds recently adopted, and in accordance with which work was commenced a year ago has been carried out, and the work partially completed. The roads

in front of the buildings have nearly all been laid out and constructed, the grounds graded and in part seeded down and planted; but much still remains to be done. It is purposed to continue this work in the spring, seed down as much as possible, and do all that we can in the way of permanent planting in the arboretum. According to this plan the trees, shrubs, etc., will be grouped in families, which will afford the best means of readily giving such instruction to the students as they need in arboriculture, and as each specimen will be properly labelled, the collection will also be a source of information to every visitor. We have already provided a large collection which is now growing upon the grounds, and which will be used for this purpose; we also hope to obtain many additional varieties from year to year, and thus in time make the collection as complete as possible.

NURSERY.

A piece of ground has been appropriated for the purpose of a nursery, in which several specimen hedges have been planted, where young trees, taken from the seed beds of the past two years are being grown, and will soon be ready for planting for forest or ornamental purposes.

FOREST CLUMPS.

The several forest clumps planted for experimental and ornamental purposes are doing well, several of them having made excellent growth. The vacancies in the clump of European larch have been filled, and the newly planted trees have rooted nicely, and made fair progress.

GREENHOUSE AND CONSERVATORY.

The building of the greenhouse, conservatory, and propagating houses, which we had hoped to see completed during the past year, and which are so much needed in order to provide facilties for the education of the pupils in botany and horticulture and to propagate material for adorning and beautifying the grounds, has been unavoidably delayed. The appropriation for the purpose was found to be insufficient to complete the work, and hence it was thought best to postpone it for another season, when it is hoped that the grant will be increased so as to admit of the building and finishing of these structures in accordance with the admirable plans which have been prepared and adopted.

D. W. Beadle,
Wm. Saunders.

MEAN TEMPERATURE for the Winter and Summer quarters for several stations in Quebec, Manitoba, and N.-W. T., with the average highest and lowest temperatures at the same stations.

—	STATIONS.	MEAN TEMPERATURE.				EXTREMES (average).	
		Winter.		Summer.			
		Temp.	A	Temp.	A′	Highest in Summer.	Lowest in Winter.
		°		°		°	°
STATIONS E. OF QUEBEC.	*Quebec*	*15.9*		*62.5*		*89.7*	*-22.9*
	Chicoutimi	11.9	—0.6	60.8	—0.3	96.3	-32.2
	Cape Rosier	14.5	+4.7	55.2	—1.9	74.0	-15.0
	Anticosti, S. W. P.	17.0	—0.6	56.9	—0.3	71.0	-14.6
	Father Point	15.5	—1.0	54.9	—0.4	80.3	-23.8
	Cranbourne	15.6	—0.6	59.2	—0.3	90.0	-27.8
	Dalhousie, N. B.	13.3	—0.6	55.6	—0.3	92.2	-20.5
STATIONS IN MANITOBA AND N.-W. T.	*Winnipeg*	*2.0*		*60.7*		*93.4*	*-41.7*
	Rapid City	5.6	—3.0	62.2	+0.3	91.2	-41.7
	Poplar Heights	6.1	—4.9	61.5	—0.5	88.7	-40.8
	Stony Mountain	6.5	—4.9	61.5	—0.5	89.9	-42.4
	Gimli	2.3	+1.0	58.9	+0.5	85.5	-54.4
	Minnedosa	4.3	+0.6	58.6	—1.1	86.5	-39.0
	Fort Macleod	26.2	—4.5	62.0	—0.1	108.0	-24.0
	Fort Calgary	12.9	—4.3	53.4	+0.4	93.0	-41.0
	Swan River	—7.2	+3.9	58.2	+0.4	92.0	-47.0
	Fort Walsh	.....	.....	56.0	+0.4	92.0	.....
	Kalmar, Keewatin	6.7	—2.8	61.4	—0.7	90.0	-63.0

The figures in columns A and A′ represent a correction which should be applied to the given mean for the station to reduce it to the mean of a larger number of years, and is derived from the observations at Quebec and Winnipeg respectively.

FORESTRY.

REPORT OF THE COMMITTEE APPOINTED TO ATTEND THE AMERICAN FORESTRY CONGRESS AT ST. PAUL, MINNESOTA.

To the Honourable the Commissioner of Agriculture :—

Dear Sir,—The committee appointed by you to represent the Province of Ontario at the meeting of the American Forestry Congress, held in St. Paul, August 8th to 10th, 1883, beg to submit the following report :—

We reached St. Paul on the morning of the 8th of August in good time to participate in the proceedings of the opening meeting, which was well attended by representative men from all parts of the United States. The sessions were held in the spacious hall of the House of Representatives at the capitol.

The meeting was called to order by the Hon. George B. Loring, President of the Congress, at ten o'clock a.m.

Upon motion of F. P. Baker, of Kansas, a resolution was passed for the appointment of a committee upon the order of business, to consist of three persons appointed by the chair.

Mr. F. P. Baker, Mr. G. W. Minier and Hon. H. G. Joly, were appointed as this committee.

Hon. H. G. Joly moved a resolution, which was adopted, as follows :—

"*Resolved*, That a committee be appointed with instructions to draft resolutions concerning the great loss suffered by the American Forestry Congress by the death of Dr. J. A. Warder, one of its vice-presidents, since its last meeting."

The Chair appointed Hon. H. G. Joly, Dr. F. B. Hough, and Rev. N. H. Egleston, as this committee.

Upon motion of Rev. N. H. Egleston, a resolution was offered, expressing the regrets of the Congress upon the death of the Hon. Leonard B. Hodges, of St. Paul; and upon motion of Mr. G. W. Minier, the name of the late Arthur Bryant, Senr., of Princeton, Ill., was included. It being suggested that there might be other names worthy of mention, the resolution was further amended and passed, instructing the committee above named, to include such as they might deem worthy, and instructing the secretary to transmit certified copies of these resolutions to the families of the deceased persons.

Mr. R. W. Furnas, of Nebraska, offered the following resolution :—

Resolved, That Article VI. of the Constitution be amended by inserting the word "president," so that it should read as follows :—

"Art. VI. The president, vice-presidents, secretaries, and treasurer, shall constitute an executive committee, for the transaction of such business as may be required by the Constitution, or by a vote of the Congress."

This resolution having been adopted, another was offered by Mr. FURNAS, to further amend by striking out the words "the close of," from Article XII. of the Constitution, so that it should read as follows:—

"ART. XII. At each annual meeting there shall be an election of officers for the ensuing year," etc.

This being adopted, Mr. J. S. HICKS, of New York, moved a resolution directing the appointment of five persons in addition to those appointed by the Constitution, to serve as an executive committee; which was adopted.

Mr. J. G. KNAPP, of Florida, offered a resolution for the appointment of a temporary treasurer, in the absence of Dr. Charles Mohr, the treasurer, which was adopted, and Mr. J. Fletcher Williams, of Saint Paul, was appointed.

Mr. R. W. FURNAS offered a resolution, which was adopted, directing the president to appoint a committee of three upon organization; whereupon Mr. Furnas, of Nebraska; Mr. B. G. Northop, of Connecticut; and Mr. J. H. Morgan, of Ontario, were appointed.

Mr. BAKER, from the committee on order of business, reported the following rules for the present session, which were adopted:—

"1. That until all work be disposed of, the Forestry Congress meet every day at ten in the forenoon, two in the afternoon, and half-past seven in the evening.

"2. That all the papers prepared by members present be read according to the alphabetical order of the writers' names.

"3. That the titles of the papers sent by absent members be read, and that on motion of any member, the Congress will decide whether such paper be read at length or not.

"4. After the reading of each paper, the subject matter will be open to discussion, no member being permitted to occupy the attention of the Congress more than ten minutes.

"5. That privilege be granted to this committee to make any further report, should it be deemed necessary."

Upon motion, offered by the Rev. N. H. EGLESTON, and adopted, the chair was directed to appoint a committee to report upon the best methods of Tree Planting; whereupon the Rev. N. H. Egleston, of D. C.; Mr. George W. Wright, of Iowa, and Prof. W. B. Lazenby, of Ohio, were appointed.

The following named persons were then elected members of the Forestry Congress, upon recommendation of two members, viz.:—

J. H. Morgan, of Amherstburg, Ontario.
Edward Daniels (Curator Acad. Science), of Saint Paul, Minn.
B. G. Northop, of Clinton, Conn.
George H. Wright, of Sioux City, Iowa.
J. Fletcher Williams, of Saint Paul, Minn.
F. P. Baker, of Topeka, Kansas.
Warren Higley, of Cincinnati, Ohio.
William R. Marshall, of Saint Paul, Minn.
Dr. J. H. Bryant, of Saint Paul, Minn.
Eugene Seeger, of Saint Paul, Minn.
Ferdinand Harrsen, of Saint Paul, Minn.
J. L. Budd, of Ames, Iowa.

The hour of twelve meridian having arrived, the Congress took a recess until two o'clock p.m.

Afternoon Session, August 8th.

The hour of two o'clock having arrived, the President took the chair, and announced the presence of Gen. George L. Becker, of Saint Paul, President of the Minnesota State Forestry Association, who addressed the Congress with a speech of welcome, on behalf of the Association, as follows :—

PRESIDENT BECKER'S ADDRESS.

Mr. President, Gentlemen of the American Forestry Congress :—

It is both a pleasure and a privilege to address such a body of men as is assembled here to-day. You are on the border of these great boundless plains stretching, as our great American poet has said :—

"In airy undulations far away,
As if the ocean, in its gentlest swell
Stood still, with all its rounded billows,
Fixed and motionless for ever."

They are the plains and the prairies which were known to our old geographers, and familiar to the most of us in our boyhood days, as "the Great American desert." We have lived to see stretched out on every side over them the iron rail, and the mighty electric wire ; and we see these plains becoming covered by a large population who are constantly developing the fact that they are rich in all that adds to the dignity and the comfort of man. When I first came to Minnesota I started out with this proposition : that God had never made such a country as this without providing everything necessary for the use of the human family, and I argued from that, that sooner or later we would find our deposits of coal here for our use. After thirty years we haven't found the coal. I am still a believer in the proposition that I then maintained ; but whether we are to discover our means of lighting and heating this vast territory in the unknown powers which yet lie undeveloped in the electric force, or in the decomposition of gases in the air we breathe, or by the more laborious process of tree planting, I am unable to say ; but that the means are here ready at our hand when we discover them, I haven't the slightest doubt at all. The Minnesota State Forestry Association has been in existence a number of years. It is not large in numbers ; not influential in its members. It has been teaching the A B C of forestry literature to our people, just as the schoolmaster teaches the schoolboy. To begin with, we had to encounter unbelief, ignorance and prejudice. The average settler of the prairie did not believe that trees would grow there. He thought that if trees had been intended to grow there they would be there, and it seemed almost like flying in the face of Providence to think of planting trees on the prairies. But a little leaven has leavened the whole loaf, and I believe that the settler who plants himself upon the prairie without contemplating a tree plantation that will grow, is the exception rather than the rule.

There is one earnest man whom we miss to-day. He whose life was devoted to this work is dead. He died in the early spring, in the midst of his great purpose of planting trees along the line of the Northern Pacific. I refer to Mr. Leonard B. Hodges, our late Secretary. He was the author of our pamphlet of which we have published several editions—the Tree Planting Manual. He was an honest man, a good citizen and a true friend, and he gave an impetus to tree planting which all other forces combined never gave to tree planting in this State. He was himself a learned and practical tree planter. Better than any man I ever knew, he illustrated the truth that,

"Vast and sudden deeds of violence,
Adventures wild, and wonders of the moment,—
These are not they which generate
The calm and blissful and enduring mighty."

His body lies in a beautiful cemetery near our town. His monument, more enduring

than brass and harder than marble, is in the long lines of trees which line the railroads of this State and the groves that dot our prairies; and they will tell for generations to come of his practical and patient labours. I need not say to you, gentlemen, that we shall be glad to listen to your discussions. We shall study them with great care, and we shall hope to derive from them great inspiration and wisdom for the future.

At the conclusion of his address he introduced to the meeting the Governor of Minnesota, Governor HUBBARD, who welcomed the Congress in the following terms :—

Gentlemen of the American Forestry Association :—

I extend to you a hearty welcome to our State. I assure you, gentlemen, that you have come among a people who appreciate the great importance of the interest in whose behalf you are labouring, and who wish to aid you by their efforts, as well as to profit themselves thereby. It is most appropriate that Minnesota should be selected for the place of your meeting at this time. Our people for several years past have given much attention to the subject of tree culture, and the prairies of one State to-day bear witness of what may be accomplished by an earnest and systematic effort to perpetuate and preserve the growth of our forest trees. The encouragement given by legislation, national and State, to the promotion of timber culture, supplemented by the intelligent action of your body, and of our State Association, has made forestry a prominent feature in the agricultural industries of the west, and has made habitable and indeed hospitable many otherwise dreary and desolate wastes. Your efforts, gentlemen, are entitled to cordial recognition. Your work is a great public benefaction. The people of the North-West, and of Minnesota especially, as I have said, realize the value of the interest you are seeking to promote, and they bid you, gentlemen, a most cordial welcome to our State, whose broad area already illustrates the great good you are doing.

To this welcome President LORING replied :—

I am sure I express the sentiment which animates you, when I say that the cordial welcome we have received here is grateful to this Congress. I am sure no State in this Union could have been more appropriate than this in which we meet, for the consideration of one of the most important subjects that can be brought before the minds of those who are interested in the prosperity and industry of the United States—the care and preservation of the forests to which Minnesota has given such careful and accurate attention, both by her Forestry Association on the one hand, and by her State deliberators and members of Congress on the other.

The discussions were then opened by the reading of the President's annual address, which will be found to be full of valuable information.

PRESIDENT LORING'S ADDRESS.

GENTLEMEN,—When I had the honour of addressing an assembly of those interested in promoting the cultivation and preservation of forests in this country, and in ornamenting our cities and towns by the planting of trees in their parks and along the highways, now a year ago, I dwelt largely on the value and importance of providing in every way for the gratification of our refined tastes and for increasing the popular sense of beauty. I did this as preliminary to the more practical work which called that assembly together, and as an appeal to the strongest motive man has to engage in the business of providing for his wants and surrounding himself with the comforts and luxuries which prosperity secures. At this time I propose to confine myself strictly to the condition of forests in this country, and to such suggestions as may occur to me with regard to their increase, preservation, and economical use.

And first as to the increase of our forests. In this work both nature and art are engaged. The "forests primeval" meet man wherever he advances to the occupation of new lands best adapted to feed and clothe him, and best fitted for agricultural labour and production. His primary work is to remove this great vegetable growth, whose condition indicates the quality of the soil he proposes to cultivate. If he pauses in his work the

forests return to their accustomed place. In the older States many acres which half a century ago were used for pasturage or tillage are now covered with forest growths, and many timber lands which have once supplied the forest products are now hastening to supply a new crop. The acreage of woodland is undoubtedly increasing in those sections where farming has become unprofitable either through the exhaustion of the soil or through a change in the locality and demands of the markets. In the strictly lumbering States this is also true. While the deserted, remote, and mountain farms in Massachussetts are rapidly "growing up to wood," the woodlands of Maine and Michigan and many another lumbering State are growing a new crop, which in a quarter of a century will be more valuable than the original growth, although much reduced in size. The young pine and spruce forests of the north, covering acres of land once occupied by their sturdy progenitors, are full of promise and beauty. In other sections of the country, lands, which have for ages been bare of trees while exposed to annual prairie fires, and under the protection of man, producing rapid growths of wood. As the settler guards his fields against fires and cattle, trees spring up, and especially along the water-courses may be seen forest belts where an entire absence of trees had been the law for many generations of men. Wherever the land is protected, therefore, whether it be the location of old forests, or bare spots adapted to tree-growing where the forests have been hitherto unknown, nature is busily engaged in producing wood, and in bringing back the forest growth which welcomes advancing man as he goes on in his work of civilization.

In addition to this natural increase, much has been done in many of the States in tree-planting, and much more ought to be done. The establishment of "arbor days" and the inducements held out by legislation have operated very favourably on the work of what is called village improvement, and on an agricultural attention to the cultivation of trees as a crop. And this business has increased with very considerable rapidity in some of our best farming States. In Minnesota, for instance, the number of acres planted on "arbor day" in 1878 was 811; in 1882 the number was 1,184; and the whole number of acres planted increased from 18,029 in 1878, to 38,458 in 1882. Work similar to this is done in Iowa, Nebraska, and Dakota, as well as in Ohio, Michigan, Illinois, and Kansas. In Nebraska, the number of acres of cultivated woodland has reached 107,438, as against 19,695 acres of natural increase. These are small beginnings, it is true, but they are entitled to our most careful consideration as the commencement of an enterprise which, when properly conducted, will undoubtedly constitute an important branch of American agriculture.

Tree-culture ought now to receive our most careful attention. It is time that the skill which has been applied to the cultivation of our great cereal crops, to cotton, rice, tobacco, and all the profitable products of the soil, such as grass, and vegetables, and fruits of every description, should be applied also to the growing of wood as a farm product. To the choice of forest trees adapted to each locality; to the selection of land which can most properly be devoted to trees, considering its fitness or unfitness for any other crop on account of quality and situation, whether near to or remote from farm buildings, whether useful or not for pasturage and tillage; to the best methods of cultivation, whether by seeding or planting from nurseries; to the best method of securing a speedy return—to all these points the attention of practical and investigating farmers should be carefully and systematically turned. The profit of the crop can, I presume, be no longer questioned. Waste lands enclosed and left to nature have produced in wood a very large return for the investment. Why should not land subjected to the well-directed art of the cultivator produce just as good a result? For the purpose of encouraging this enterprise it is important that Government should lend its aid in every legitimate way until the wood crop is recognized exactly as are the great staple crops of the country. If a bounty is legitimate and useful in any case, it certainly would be in this. The protection against lawless invasion thrown around our grain fields and gardens should also be extended to our woodlands, protection against depredation, wanton fires, and stray cattle. The rifling of a forest should be as penal an offence as the rifling of an orchard. Over forest-covered public lands and over forest plantations, against the careless destruction of the settler on the one, and the trespass of the outlaw on the other, should the strong arm of the law be constantly and vigourously extended.

THE VALUE OF THE INDUSTRY.

In order that I may impress upon you the value of this industry I will ask your attention to its extent in our country, which covers such a vast area. I do this in order to impress upon your minds not only the value but the great importance of husbanding our resources in this direction in view of the constantly increasing demand for our forest products in all their variety. The forest lands of the United States amount to less than one-fourth of the entire area. The proportion of wooded area is less than in eastern, northern, and central Europe, and is very unequally distributed. Norway has two-thirds of its area wooded, Sweden six-tenths, Russia nearly one-third, and Germany nearly one-fourth. The countries having less forest areas, arranged in order of proportion, from eighteen down to five per cent., are Belgium, France, Switzerland, Sardinia, Naples, Holland, Spain, Denmark, Great Britain, and Portugal.

Originally the southern, middle and eastern States were entirely wooded, except a large portion of Texas, and a few small prairies in the south-west. Small areas of mountain glades among the Alleghenies might also be excepted. Ohio and eastern and southern Indiana were wooded, and the northern portions of the lake States.

West of the line of prairies running south-west through Indiana, Illinois, Missouri, to the Indian territory, the central prairies, the drier plains, and much of the southern belt of the Pacific slope are destitute of wood. The streams in all the great region are more or less fringed with trees of some sort, and the higher mountains on the protected sides have a thin covering of forest. In the deep valleys of the western slope of the Sierra Nevadas are forests of extraordinary density filled with soft-wooded evergreen trees of enormous size, the wonder and admiration of the practical woodman. Here the *Sequoia gigantea*, or big tree, flourishes in isolated patches, while the coast range is the home of the *Sequoia sempervirens*, or redwood.

From North Carolina to Louisiana nearly six-tenths of the farm area is wooded, though much of the area thinly, and part of it has been culled and is in second growth. Including unoccupied areas, not in farms, which are in forest, something like three-fourths of the entire south is wooded.

There are counties in the south that were ten years ago almost unbroken forest. More than nine-tenths of the area of Brunswick, North Carolina, were then wooded, and almost as large a proportion of Beaufort, Craven, Onslow, New Hanover, and Bladen. A similar preponderance obtained in Williamsburg, Georgetown, and Lexington, in South Carolina ; and in Camden, Charlton, Clinch, and others in Georgia. In all of the gulf States such districts were found. Less than two per cent. of Newton County, in eastern Texas, was cleared. To-day the proportion of woodland is but little less. On the farm areas of Georgia the percentage of forests has increased from fifty-five to fifty-nine on account of taking two or three millions of primitive forests into the farm area. In Florida, from the same cause, it has increased from sixty to sixty-six per cent. The decline has been from sixty-one to fifty-eight in Mississippi ; from fifty-seven to fifty-five in Louisiana. It has increased from forty-two to forty-four in Texas ; and nearly one hundred counties show from ten to eighty per cent in wood. The wealth of the forest growth is scarcely appreciated in large districts of the south. There are districts where clearings are yet made yearly by girdling the trees in the summer for planting among the boles standing bare and blackened. Every winter a log-rolling disposes of the trunks that fall, until decay and fire have cleared the field. And it is not long since a sprinkling of black walnut rails could be seen in the worm fences which still surround the fields of corn and cotton, and probably a few can yet be found.

Comparing the census returns of 1870 and 1880 we find a decrease of woodlands in farm areas in Michigan from forty-one to thirty-two per cent ; in Minnesota from twenty-one to fifteen, and in Iowa from sixteen to eleven per cent. In Nebraska tree-planting has changed the record from three to ten per cent. From the increase of farms in the wooded area Wisconsin has thirty-one instead of twenty-nine per cent. The comparison is thus tabulated :

States.	1880.			1870.		
	Acres in farms.	Acres in woodland.	Per cent. of farm lands.	Acres in farms.	Acres in woodland.	Per cent. of farm lands.
Michigan	13,807,240	4,452,265	32	10,019,142	4,080,146	41
Wisconsin	15,353,118	4,768,046	31	11,715,321	3,437,442	29
Minnesota	13,403,019	2,030,726	15	6,483,828	1,336,299	21
Iowa	24,752,700	2,755,290	11	15,541,793	2,524,793	16
Nebraska	9,944,826	321,566	3	2,073,781	213,374	10
Totals	77,260,903	14,327,893	18	45,833,865	11,592,054	25

The belt including latitudes 37° to 41° through which runs the Ohio River extended westward across the Mississippi River, shows a decrease from 34 to 26 per cent, : greatest in Ohio and Indiana, as follows :

States.	1880.			1870.		
	Acres in farms.	Acres in woodland.	Per cent. of farm lands.	Acres in farms.	Acres in woodland.	Per cent. of farm lands.
Kentucky	21,495,240	10,106,072	47	18,660,106	9,134,658	49
Ohio	24,529,226	5,982,507	24	21,712,420	6,883,575	32
Indiana	20,420,983	5,935,308	29	18,119,648	7,189,334	40
Illinois	31,673,645	4,935,575	16	25,882,861	5,061,578	20
Missouri	27,879,276	10,137,790	36	21,707,220	8,965,229	41
Kansas	21,417,468	991,187	5	5,656,879	635,419	11
Totals	147,415,838	38,088,439	26	111,739,134	37,869,793	34

In the eastern section, Maine shows an increase from new farms in Aroostook county and other northern counties, but it has been denuded of heavy timber and left for new growths, and therefore makes a deceptive showing. New York shows a decrease from 26 to 22 per cent., and Pennsylvania from 32 to 29, as follows :

States.	1880.			1870.		
	Acres in farms.	Acres in woodland.	Per cent. of farm lands.	Acres in farms.	Acres in woodland.	Per cent. of farm lands.
Maine	6,552,578	2,682,296	41	5,838,058	2,224,740	38
New Hampshire	3,721,173	1,296,529	35	3,605,994	1,047,090	29
Vermont	4,882,588	1,503,467	31	4,528,804	1,386,934	31
New York	23,780,754	5,195,795	22	22,190,810	5,679,870	26
Pennsylvania	19,791,341	5,810,331	29	17,994,200	5,740,864	32
Totals	58,728,434	16,488,418	28	54,157,866	16,079,498	30

Taking the States by groups the inequality of forest distribution is strikingly shown. The following statement divides the woodlands reported on farm areas as follows :

States.	Acres in farms.	Acres in woodlands.	Per cent. of farm land.
New England	21,483,772	7,315,730	34
Middle	47,592,113	11,993,317	25
South Atlantic	90,117,593	49,339,653	55
Gulf and Southern	112,004,983	59,078,032	53
Ohio Valley and Lake	137,473,231	42,360,123	31
Trans-Mississippi	97,397,289	16,236,559	17
Pacific	21,339,316	3,115,924	15
Rocky Mountain	8,673,738	816,406	9
Totals	536,081,835	190,255,744	35

CHANGES BY YEARS.

The following tables give a list of the States showing changes of ten years, both in farm and woodland areas :

States and Territories.	Acres of woodland.	Per cent. of farm lands.
Maine	2,682.296	41
New Hampshire	1,296,569	35
Vermont	1,503,467	31
Massachusetts	1,004,099	30
Rhode Island	182,666	35
Connecticut	646,673	26
New England	7,315,730	34
New York	5,195,795	22
New Jersey	708,092	24
Pennsylvania	5,810,331	29
Delaware	279,099	26
Middle	11,993,317	25
Maryland	1,634,019	32
Virginia	9,126,601	46
North Carolina	13,868,086	62
South Carolina	7,255,121	54
Georgia	15,269,225	59
Florida	2,186,601	66
South Atlantic	49,339,653	55
Alabama	10,430,727	55
Mississippi	9,144,323	58
Louisiana	4,557,332	55
Texas	15,851,365	44
Arkansas	7,861,409	65
Tennessee	11,232,876	54
Gulf and Southern	59,078,032	53
West Virginia	6,180,350	61
Kentucky	10,106,072	47
Ohio	5,982,507	24
Michigan	4,452,265	32
Indiana	5,935,308	29
Illinois	4,935,575	16
Wisconsin	4,768,046	31
Ohio Valley and Lake	42,360,123	31

States and Territories.	Acres of woodland.	Per cent. of farm lands.
Minnesota	2,030,726	15
Iowa	2,755,290	11
Missouri	10,137,790	36
Kansas	991,187	5
Nebraska	321,566	3
Trans-Mississippi	16,236,559	17
Colorado	44,117	4
Arizona	13,399	10
Dakota	80,264	2
Idaho	11,892	4
Montana	3,678	1
New Mexico	219,224	35
Utah	2,305	0·4
Washington	437,696	31
Wyoming	510	0·4
Indian	3,321	18
Rocky Mountain	816,466	9
California	1,672,810	10
Oregon	1,424,417	34
Nevada	18,697	4
Pacific Coast	3,115,924	15
United States	190,255,744	35

Of the value and importance of the forests covering these areas let me say: Next to the white pine of the northern forests, the most valuable tree is undoubtedly the *Pinus australis*, or long-leafed pine of the southern coast lands, forming a belt of varying breadth, up to 100 and 150 miles from the Atlantic and Gulf shores. It is the Georgia pine of builders, preferred for flooring and heavy frame-work, and is still found in pristine vigour and abundance over a large area from Norfolk to Galveston. These pine lands are now eagerly sought for by American and English capitalists, are rapidly taken up for manufacturing operations or on speculative account, and are rising in value. They have been held for many years by the general government at prices ranging from 12½ cents to $1.25 per acre, the former being for lands that had been opened to market for a certain period. This is the turpentine pine of North Carolina, where the business of distilling turpentine and making tar and resin has long been profitable. It is also carried on, though in isolated enterprises, in other portions of this coast belt.

TURPENTINE PINE.

The products of the year ending April, 1880, are thus estimated by Mr. A. H. Van Bokkelen:

States.	Turpentine.	Resin.
	Gallons.	*Barrels.*
North Carolina	6,279,200	663,907
South Carolina	4,593,200	333,940
Georgia	3,151,500	277,500
Florida	1,036,350	68,281
Alabama	2,005,000	158,482
Mississippi	250,000	20,000
Louisiana	250,000	20,000
Total United States	17,560,300	1,542,110

The Southern pine will come into still greater prominence as railroad and steamboat lines extend facilities for transportation, which is now being done with great rapidity.

THE SUPPLY OF PINE.

The condition of the pine-lumber supply of the United States in connection with the statements I have made is interesting. The destruction of this tree by fire and the axe of the settler and lumberman is very great. Together with the spruce it is being rapidly consumed, and I think the following figures will show that the supply is to be obtained hereafter by allowing an exhausted region time to recuperate, while the comparatively uncut sections are resorted to for filling the demands of the market. Investigations recently made show that the supply of pine in New Hampshire and Vermont is exhausted, and that the spruce lumber, at the rate the cutting is now going on, will last in the former State but seven years, and in the latter but four. In the State of Maine the pine will last four years and spruce fifteen years. In South Carolina the pine forests will last fifty years at the present rate of cutting; in California, 150 years; in Arkansas, 300 years; in Pennsylvania, fifteen years; in Georgia, eighty years; in Louisiana, 100 years; in North Carolina, fifty years; in Wisconsin, twenty years; in Michigan, ten years; in Minnesota, ten years; in Mississippi, 150 years; in Alabama, ninety years; in Florida, thirty years; in Texas, 250 years. That the exhausted forests in this list of States can be restored in time there is no doubt; and every means of cultivation and protection should be applied by the people and the Government, both State and Federal, each in accordance with its own jurisdiction.

FEARS OF A TIMBER FAMINE UNFOUNDED.

We should not forget, however, that while the demand for timber is imperative and increasing with increase of population, requiring the fostering care of the Government and the enlightened enterprise of timber-growers in promoting the progress of forest culture, there may be danger of assuming too hastily a prospective timber famine, and fabulous prices for fuel, even with the foregoing striking estimates before us.

It should be remembered that thus far the exhaustion of lumber relates mainly to the white pine. It may be found, when the great pineries shall be cut over, that the outcome is greater than was assumed, and that isolated patches of pine in mixed forests, and the second growths and remnants from first cuttings, may suffice to delay the threatened famine.

The black walnut, culled from western forests to meet a limited though important demand, is really becoming scarce on the northern side of the Ohio valley; but on the southern, along the foot-hills and in the valleys of the Appalachian range, it is abundant and almost untouched. It grows rapidly in the western States even beyond the Missouri, and it is destined to be the source of wealth to the future tree-grower.

The millions of acres of existing forests on this great eastern chain of mountains have not yet been considered in the statistics of forestry here presented. Their resources have never been measured, are yet comparatively unknown, and almost untouched by the axe of the woodman. As railroads penetrate these mountain fastnesses in the Virginias, the Carolinas, Kentucky and Tennessee, bonanzas of forest production will respond to the call of enterprise, and enrich the proprietor woodsman and manufacturer. In addition to this, the white pine of Minnesota is estimated at 6,100,000,000 feet exclusive of isolated timber in birch lands and amidst other hard-wood growth. In Michigan the estimates for the lower peninsula cover 7,000,000,000 feet in the Saginaw district; 8,000,000,000 on the streams flowing into Lake Huron, and 14,000,000,000 on those flowing into Lake Michigan. The upper peninsula contains 6,000,000,000 more, making 35,000,000,000 feet in the principal pine districts of Michigan.

The great pine forests of Wisconsin are estimated to contain 41,000,000,000 feet of lumber, the largest proportion in the Chippewa and Wisconsin districts. They cover an area of 22,500,000 acres. The northern border of the pine area is less productive than the areas of lower latitudes. The cedar swamps of Wisconsin scattered through the pine belt are estimated to cover 1,365,000 acres, and to contain 62,800,000 posts, telegraph poles, and railroad ties. There are also large supplies of tamarack, and spruce, and valuable oak timber, especially in Dunn, Pierce, and Saint Croix counties, and other hard woods are abundant through the southern border of the wooded districts.

The united area of the States south of Maryland and the Ohio river is more than 500,000,000 acres containing nearly 400,000,000 acres of forest lands. The farm area of these States is 228,000,000 acres, containing 123,000,000 acres of woodland. Denude any portion of this forest surface, and trees spring up spontaneously and grow rapidly. There are millions of acres of young forests in the South in which the corn-hills are almost as prominent as when the waving corn occupied the surface. Nature abhors a vacuum of broom-sedge, the first growth of abandoned fields, and speedily replaces it with a forest of pines. Intelligent landowners of this region have estimated an average growth of a cord of wood per acre each year, or twenty cords of wood per acre in twenty years.

Is there immediate danger then of scarcity of fuel in a country where more than two-thirds of the entire area is wooded; and when nature is so kind and so prolific in forest farms, cannot the supplementary hand of man aid in providing even a sufficiency of timber for the wants of coming generations?

PRESERVATION OF FORESTS.

But notwithstanding this somewhat encouraging view, much remains to be done for the preservation of our forests. The waste by careless cutting, by fires, by settlers clearing the land for agricultural purposes, is enormous. Thus far this has not been checked to any great degree. Local and federal legislation, diffusion of knowledge, the manifest destruction of valuable property have not yet been able to bring the forests within the pale of well-protected possessions under the law. Often has the remedy been pronounced by those who have devoted their lives to the study of this industry, and often have laws been passed which seemed to afford a remedy for the existing evil. But still the work of destruction goes on. It now remains, as it seems to me, for the public mind to be brought to a true understanding of the value of the property itself, and of the disaster which would attend its destruction. That protection can be secured in the States by associations like this, by practical men engaged in planting trees and preserving their woodlands, by bounties for successful tree-culture, by the distribution broadcast of bulletins and pamphlets, there can be no doubt. On the best method of legislation it is not easy to decide. Bounties based on exemption from taxation have not had the desired effect, the tree-planting having served more as a mode of evading taxation than as a means of developing an industry under the stimulus of protection. And of one county in Iowa it is said "the experience of the board of supervisors justifies them in the opinion that forest culture in our county would advance as rapidly without as with the exemption laws." On the other hand the State auditor declares that:— "There can be no question but that this law of our State has greatly stimulated the planting of forest trees and orchards too;" and that "if advantage could be taken of its popularity by inducing planters to set out a better class of trees, such as ash, walnut, etc., more good would thereby be accomplished." Connecticut, Dakota, Nevada, Pennsylvania, Rhode Island, Texas and other States, have all passed Acts encouraging tree-planting, either by bounty or exemption. Encouragement has also been largely offered by agricultural associations in most of the States, and great attention has been given to the proper selection of trees for each locality. The introduction of new varieties of forest trees has been carefully considered also; and the habits of trees, native and foreign, have been made matters of the most diligent study, both by those who are governed by scientific zeal and those who are engaged in developing a practical industry. Of the efforts of the Federal Goverment to preserve and develop the forests on the public lands of the United States much has been said.

THE TIMBER CULTURE ACT.

On the working of the Timber Culture Act it is unnecessary for me to dwell. But I think I can, with profit, submit some suggestions. made by the Land Office, with regard to "timber depredations" and the laws to prevent them. On this point the Land Commissioner, in his report of 1882, says:

"While much has been accomplished in the direction of suppressing the unlawful cutting and removing of timbers from the public lands, I am of the opinion that bet-

ter results can be obtained in the future ; particularly so if some general and comprehensive law could be passed, clearly defining who may take timber from the public lands, the purposes for which it may be cut and removed, and prescribing the punishment for unlawfully cutting, removing or in any way wantonly destroying or injuring any timber growing, or being upon any of the public lands, or in any way causing or inciting such trespass. Such law should also establish the terms and conditions upon which any compromise or settlement should be authorized. A law of this nature would be more generally understood and comprehended than the several different enactments relating to this subject now in force, and could be more easily and evenly administered."

This is recommended because it is difficult to get competent and reliable special timber agents under the existing laws, and because the offences are committed too often under cover of the homestead entries fraudulently made for the purpose of securing the timber on the lands. I think the difficulty in this matter lies in the fact that no value is set upon the timber itself as a piece of Government property. It has been assumed that Government does not desire to make the timber a source of revenue or profit, and that in the survey of lands no discrimination should be made on the score of existing resources. This policy may be wise and necessary, but it is not thrifty. Early in the history of the Government public lands were sold, as in the case of the sale to the Ohio Company in 1787, for the purpose of replenshing the public treasury. And while Congress has exercised great liberality in the donation of lands for various enterprises, still the fact remains that this landed possession is of greal financial importance. The time is gone by when the standing timber of the country, either on public or private domain, can be considered an obstruction to be removed by the axe and fire to make way for crops of another description. There is a value attached to it equal to that of any crop known—a value which should in some way be considered in the transfer of public lands to settlers and purchasers. Whenever in any way a recognized value is attached to the timber itself, be it large or small, its protection and preservation by the Government becomes a natural consequence, and wanton destruction by the axe and fires may be prevented. Government now offers a bounty for planting trees by its timber act, and makes no adequate provision for the preservation of the valuable forests standing on unoccupied lands. It seems as if this case might be met by some form of legislation.

The Timber Culture Act was passed March 3, 1873, amended March 13, 1874, and again June 14, 1878, since which date 75,045 entries have been made, of the aggregate of 93,246, since the first passage of the Act. The area covered by these entries is 13,677,146 acres, of which 4,890,802 are in Dakota, 3,594,775 in Kansas, and 2,338,155 in Nebraska. In 1882 the entries amounted to 2,566,686 acres, more than half of which were in Dakota. The distribution of the aggregate entries is as follows:

States and Territories.	Entries.	Acres.
Arizona	88	11,866.08
Arkansas	3	231.92
California	1,245	168,413.53
Colorado	1,101	153,373.87
Dakota	31,178	4,890,802.15
Idaho	1,089	141,903.25
Iowa	640	55,151.51
Kansas	24,854	3,594,775.49
Louisiana	28	3,417.85
Minnesota	10,866	1,510,382.56
Montana	497	63,273.25
Nebraska	16,463	2,338,155.60
Nevada	30	4,120.00
New Mexico	87	11,619.13
Oregon	1,570	232,954.86
Utah	137	16,144.59
Washington	3,332	476,841.52
Wisconsin	1	40.00
Wyoming	37	3,679.21
Totals	93,246	13,677,146.37

THE NECESSITY OF PRESERVING AND REPLANTING FORESTS.

In the report of R. W. Phipps, Esq., of Toronto, on "The necessity of preserving and replanting forests," I find a sketch of forests and their management in other countries, to which I call your attention as one of the most comprehensive statements we have on this subject. His sketch, which is here abridged, is taken from an extensive report of Captain Walker, a gentleman who passed nine months on the continent, by direction of the English Government for that purpose.

From Mr. Phipps I learn that in Hanover there are 900,000 acres of forest, under Government or State management, belonging to the church and to municipalities. The care and working of these forests costs about $650,000 annually. The receipts therefrom are $1,500,000, and the profit is about $850,000, about $1.50 per acre per annum. The officers in charge are a forest director, an over-forest master, 20 forest masters, 112 over-foresters having charge of districts of seven or eight thousand acres each, 403 assistant foresters. A systematic plan for the management of the forest is adopted.

After a forest has, by thinning, planting, and so forth, been gradually got into perfect order, the system of natural reproduction forms a great part of the German method. It is as follows:—

The rotation and periods are fixed in the working plan. For beech it is, in Hanover, 120 years, divided into six periods of twenty years each, that is to say, when the forest has been brought into order there should be nearly equal areas under crop of trees in each of the six periods, from one year to twenty, from twenty to forty, and so on. When a block arrives in the last period, felling is commenced by what is called a preparatory clearing, followed by a "clearing for light" in the first year after seed has fallen, with the object of (1) preparing the ground for the seed, (2) allowing it to germinate, (3) affording light to the young seedlings. If there is a good seed year and sufficient rain, the ground should be covered with seedlings in two or three years after the first clearing; but it is better generally to wait for a second year, and aid nature by hand-sowing, transplanting from patches of many to barer spots, and turning up the turf to give the seeds a better chance of germinating.

When the ground is well covered, the old trees are felled and carefully removed, so as to do as little damage as possible to the new crop, and the block recommences life, so to speak, nothing further being done till the first thinning. The time allowed between the first and final clearing, is from eight to fifteen years. * * * In these forests can be seen all the periods of growth—nurseries and schools for seedlings.

In Prussia there are twenty millions of acres of forests, ten millions of which are private, and the remainder, with which we have more to do, state, communial, and ecclesiastical. Of these the income is $14,000,000, and the expenses $7,500,000, leaving $6,500,000 clear. The forests in Prussia as in Hanover form part of the finance department, and are presided over by an overland forest-master and ministerial director, aided by a revenue councillor and joint ministerial director, and a numerous council or board. There are two forest academies, one near Berlin and one in Hanover.

There are twelve provinces in Prussia, divided into thirty circles, each having an over-forest master. These represent the forest department in local administrations, which as a board represents the forest interest in the government.

In order to be a forest-master, the lowest of the gazetted appointments, five years without pay are required to be given in study, with but meagre pay when employed, yet candidates are numerous.

In some provinces the Prussian Government has certain rights concerning the management of private forests; in others, none.

In Saxony the state forests are nearly 400,000 acres, worked at an expense of $500,000, receiving $1,750,000, leaving a clear rental of $3 per acre. The expenditure is planting, draining, roads, improvement of inferior woods, felling, transport, killing insects, etc. About 5,000 are planted yearly, at an average cost of $7.50 per acre. The official establishment resembles that of Hanover. There is a forest academy at Tharandt with a separate staff of professors.

In Bavaria the state forests cover 3,000,000 acres. They return, after paying all expenses, about $1.50 per acre per annum. About 30,000 are planted or sown annually, taking 35,000,000 plants and 1,000,000 pounds of seed. Persons found guilty of breach of forest rules have been punished by enforced labour in the woods. Private forest rights are being bought up by the government. The system of management is much the same as that previously described.

In Austria the state forests have been largely sold to meet state necessities, but there still remain nearly 2,000,000 productive acres, which yield, however, after expenses are paid little over twenty-five cents per acre. The existing establishments of forestry are not uniform, but there are about 1,200 employes, of whom twenty-two are forest-masters. Scientific forestry is not so far advanced here as in Germany, but officials are busily introducing a reorganization, by means of which, there is no doubt, it will be on a par with other states. The Austrian crown forests have been neglected. There has been till now no attempt at rotation of blocks, or working in periods. The present director is trying hard to change matters for the better. He is planting up many bare or ill-covered tracts, where natural reproduction is impossible, owing to the absence of standard trees.

In the Grand Duchy of Baden there is a most interesting private forest belonging to the Prince of Furstenburgh, in the Black Forest. There are about 72,000 acres in charge of eighteen foresters and over-foresters, who have many subordinates.

The administration of the forests in France is entrusted to the ministry of finance, and the head of the department is the director-general, assisted by two administrators, one charged with the management of the forests and the sale of the products, the other with the police of the forests and the forest laws. The forests under the management of the bureau (state or commerce) are about 7,500,000 acres. Also, there are in France 15,000,000 acres of private forests. The sawmills in the forests are usually owned by the government, and hired at a certain rate to the wood merchants, who buy the cuttings. The school of forestry at Nancy is said to be one of the best in the world. The French Government have, at great expense, replanted vast and almost barren districts; they have also established great forests along the sea shore where formerly the sand threatened to destroy whole departments, and have averted the evil.

In Russia, the government own about 330,000,000 acres of woods, and other parties 150,000,000. About forty per cent. of the country (Russia in Europe) is timbered. The immense government woods have been placed under the care of the minister of public domains, who has a director of the forest department; and the organization of the service is very complete. Two special schools of agriculture and forestry have been established; one at St. Petersburg, and one near Moscow.

Italy has over 5,000,000 acres of communal forests, over 6,000,000 of private forests, and only 500,000 acres of state forests. One-fifth of the land is in forest.

In Switzerland, the waste of forests has been more rapid and destructive than any other country in Europe, and in none, perhaps, has this been followed by more disastrous results. Public attention has, however, been thoroughly awakened, and active measures are in progress to remedy, as far as may be, these evils. The cantons which have charge of these operations have for some time at great expense, been constructing works to control the streams, and planting trees wherever practicable.

The description of the forests in the British Isles, as given by Captain Walker, from whom Mr. Phipps obtained his facts, is most interesting, and shows, as do those to which I have already referred, that the business of forestry is entitled to the most careful consideration of states and individuals.

VARIETY AND AGE.

In the practical work of planting forest trees there would seem to be a propriety in following the example of nature and giving variety, mixing trees of early maturity with those of great longevity, that the former may be cut when the great size of the latter should command an ampler space. Thus after the usual consecutive thinning for hoop-poles, fence posts, railroad ties, or other purposes, the mature trees of the genus of least longevity could be taken out, leaving the veterans of the plantation to mature their more valuable crop of heavy timber.

In this connection the consideration of the proper age for cutting with profit is important. Mr. Michie reports his recent observation of a plantation in Great Britain sixty-five years old, partly cut down, in which eighty-five per cent of a growth of mixed hard woods was deceased from over ripeness. The plantation should have been cut at fifty years. The proprietor all this time was losing a part of the value of his wood, and losing the growth of fifteen years of young trees. He cites an example of a ash growth the root cuts of which were "tough as whalebone" at fifty-five years, while at seventy-five all toughness had disappeared, and more than half its value lost. It should have been cut down and replanted at the age first named. The ash should have a clean and straight stem, and be cut while yet in rapid growth and full vitality.

In England, the larch, ash, and poplar are ripe at fifty to sixty years, while the oaks planted among them may continue to grow one hundred to one hundred and fifty years, and a second crop of the earlier maturing species be matured among the oaks. Mr. Michie places the mature age of the elm at eighty to one hundred years.

METEOROLOGICAL INFLUENCES.

The influence of forests on rainfall has been so frequently and exhaustively discussed that little of value can here be added. From ten thousand observations made in Parana the mean annual temperature of the forest soil was found to be 21° lower than in the open field, and the mean annual temperature of the atmosphere of the forest 10° lower than in the open field. Relative moisture was found to be six per cent. greater than in the open field, nine per cent. in summer and five in the other seasons. In the mountain regions the difference was greater than at lower elevations.

It is not necessary to assume that forests induce a heavier rainfall, or even to show that they influence locally the distribution of rain, to prove their beneficence in regulating the moisture available for the use of agriculture. The foliage of forests resists the violence of storms, breaks the force of the rainfall which percolates through the covering of leaves and moss, and is absorbed by the humus beneath to be given out by the slow process of retarded evaporation, the surplus finding its way to the springs deep in the earth. In an open field the storm beats with unbroken violence upon a surface impacted and hardened under the rays of the sun, fails to penetrate the soil, and rushes on in turbid streams down the slopes to swell the brooks and rivers, and instead of refreshing the earth scarifying and wasting it.

The world is full of examples of once verdant and productive areas which have become burned and blackened deserts. The gradual desiccation of the once green and productive islands of the West Indies, Santa Cruz and Saint Thomas, which has been progressive for many years, is the result of the destruction of primitive forests. The little island of Curacoa, where rich plantations, beautiful villas, and terraced gardens have given place to aridity and desolation, because of the export of its valuable timber, is a striking illustration of the changes wrought by forest destruction. The entire coast of the Mediterranean, once the garden of the world, has been blighted into comparative barrenness by the denudation of the forest areas. A portion of this territory, the Karst region of southern Austria, bordering on the Adriatic, has been the scene of extensive reafforesting work by the Austrian Government. Centuries ago it was covered with magnificent oak forests, and furnished piles and ship-building timber to Venice during her brilliant maritime career. So dense was the forest upon the Istrian coast that a squirrel could traverse it for miles on the branches of the trees. It was plundered systematically by Venetian spoilers, till the whole region was reduced to barrenness and poverty. For a score of miles north of Trieste the soil itself was washed away by the floods after the exportation of timber had been followed by relentless fires, leaving the bare rock in rugged masses as the sole covering of the surface. The work of restoration, commenced nearly twenty years ago, was one of exceeding difficulty. Exposure to sun and rain had exhausted the fertility of any remaining forest humus; the underlying masses of chalk were seamed and honeycombed with cavities requiring a mixture of underlying clay to sprout either grass-seed or tree-seed. Millions of trees were annually supplied by the Government nurseries of Austrain pine, ash, larch, and other varieties,

and year after year the slow and patient effort has been continued with results that promise the ultimate renovation of a vast area of several hundred thousand trees, though the blasted district is yet a scene of comparative desolation, requiring millions of treasure and years of patient labour to restore a tithe of its profusion of forest wealth.

The productive capacity of the United States is due not alone to the great fertility of its central areas but, in a large measure, to the amount and reasonable distribution of the rainfall. The lower latitudes, the Southern States, where high temperatures prevail and evaporation is greatest, have a rainfall of forty, fifty and sixty inches annually, with a liberal distribution through the summer months. The lake region and the Ohio basin have less, yet a good supply, suited to more temperate conditions, a lower temperature and less evaporation. Yet the droughts that occasionally prevail, and which are most severe on the borders of the wooded belt, as in Texas, Kansas, Missouri, and Illinios, should admonish us to avail ourselves of the local benefits of forests in the equalization and conservation of the rainfall actually received.

Some of the States have less than the rule of the Duke of Burgundy requires: "One-third to the hunter, two-thirds to the husbandman." The rule of William Penn, one acre in woods for five acres cleared for agricultural lands, exclusive of the wooded hills and mountain forests, was not materially less. Yet Vermont, Massachusetts, and Connecticut in New England have less than a third of the farm lands in forest; New York, twenty-two per cent.; New Jersey, twenty-four; Pennsylvania, twenty-nine; Delaware, twenty-six; Ohio but twenty-four per cent.; Michigan, thirty-two; Indiana, twenty-nine; Illinois, sixteen. These are originally wooded States, except a part of Indiana and Illinois.

The necessity of a careful and accurate cultivation and restoration of our forests is now recognized by all. For three-quarters of a century we have been busily engaged in the business of lumbering; the time has now come when we must turn our attention to the business of forestry. The great wood crop, which nature lavished on our ancestors, has been so diligently gathered that all our ingenuity will be taxed to continue the necessary supply for the growing wants of a rapidly increasing population. It is to this point that this Association should especially turn its attention. It is to this point that I have directed the work of the Forestry Division in the United States Department of Agriculture for the development of the forest industry of this country.

Mr. Joly, from the committee appointed upon resolutions concerning deceased members, then offered the following resolutions:—

"*Resolved*, That the American Forestry Congress has suffered an irreparable loss by the untimely death of one of its Vice-Presidents, Dr. J. A. Warder.

"*Resolved*, That while Dr. Warder has endeared himself, by his genial and hearty manners, to all those who have had the privilege of knowing him personally, he has at the same time gained their admiration by the untiring energy and great talent with which he has advocated for so many years past, the cause of Forestry.

"*Resolved*, That the loss of such an earnest and devoted man can be considered as a public loss, and that, while his colleagues lament it as such, they feel at the same time, what a void it must have left in his home circle, and deeply sympathize with his family.

"*Resolved*, That the Recording Secretary of the Forestry Congress be requested to send a copy of the foregoing resolutions to Dr. Warder's family."

Also the following resolutions, from the same committee:—

"*Resolved*, That the Forestry Congress desires to express its sense of loss on the death of Hon. L. B. Hodges, of this city. Mr. Hodges had been known for many years, not only as one greatly interested in the subject of forestry, but as one who, by his earnest activity, had done much to interest others in the subject. He was the pioneer in the forestry movement in the State of Minnesota. He was also one of the first to propose and aid in the organization of the Minnesota Forestry Association. By his writings, and his practical exemplifications of tree planting, he had become a recognized authority on the subject both in this country and in Europe. His death was a loss to

the country at large, but his labours in behalf of Forestry will speak for him, and bear good fruit, after his personal labours were brought to an end.

"*Resolved*, That the Recording Secretary be directed to send a copy of the above resolution to the family of Mr. Hodges."

Also the following resolutions, from the same committee:

"*Resolved*, That this Congress feels it to be a duty it owes to men who, like the late Arthur Bryant, have forethought to discern, and courage to express their convictions on the conservation of our forests,—to express regret for their death, and while we feel that men of his age have done their work, we nevertheless deplore the vacancy in our ranks.

"*Resolved*, That the Recording Secretary be instructed to send a copy of the above resolution to the family of Mr. Arthur Bryant."

Remarks upon the above resolutions having been made by Mr. Geo. W. Minier, of Ill.; the Hon. J. B. Grinnell, of Iowa; Hon. W. Higley, of Ohio; Prof. Daniels, of Minn.; Ex-Gov. Marshall, of Minn.; Hon. Ignatius Donnelly, of Minn., and Mr. D. W. Beadle, of Ontario, the resolutions were passed by a rising vote.

Mr. Baker, from the committee on Order of Business, made the following supplementary report, which was adopted:—.

"1. That all committees appointed at the Montreal meeting be requested to report at the opening of the morning session, on Thursday.

"2. That immediately after the reports of the above committees, Judge Higley present his report on the State Association of Ohio, and then, that F. B. Hough, of New York, make such statement as he desires on the steps which have been taken toward organizing a State Association in that State.

"Reports of committees:—

Mr. B. G. Northrop presented the following resolution, which was adopted:—

"*Resolved*, That the U. S. Commissioner of Agriculture be requested to call a meeting of the representatives of associations and institutions interested in Forestry, at the Department of Agriculture, during the ensuing winter."

Dr. Hough offered the following resolution, which was adopted:

"*Resolved*, That a committee of three be appointed by the Chair to prepare the form of a certificate of membership, and a device for a seal for the American Forestry Congress."

Dr. Hough, Prof. Leuè, and Prof. Northrop, were appointed as this committee.

Mr. Elizur Wright, of Mass., presented the following resolution, which was adopted:

"*Resolved*, That a committee of three be appointed by the Chair to consider and report upon the probable effects that will ensue, should the plans proposed for damming the upper waters of the Mississippi, for the creation of reservoirs, be carried into effect."

Mr. Elizur Wright, of Mass.; Gen. Geo. L. Becker, of Minn., and Hon. J. B. Grinnell, of Iowa, were appointed.

Mr. Fernas, from the Committee on Organization, reported the following list of officers for the coming year, which report was adopted:—

For President, Geo. B. Loring, of Massachusetts.
" 1*st Vice-President*, H. G. Joly, of Quebec.
" 2*nd Vice-President*, Geo. L. Becker, of Minnesota.
" *Recording Sec'y.*, N. H. Egleston, of Dist. Columbia.
" *Corresponding Sec'y.*, B. E. Fernow, of Pennsylvania.
" *Treasurer*, Charles Mohr, of Alabama.

Executive Committee.—B. G. Northrop, of Connecticut; Warren Higley, of Ohio; J. G. Knapp, of Florida; J. S. Hicks, of New York; J. L. Budd, of Iowa.

The hour for recess having arrived, Mr. Baker announced the order of business for the evening session, and the Congress adjourned till 7.30 p. m.

Evening Session, August 8th.

The hour for meeting having arrived, the President called the house to order, and requested Vice-President Joly to assume the chair.

Mr. D. C. Burson, of Topeka, Kan., read the following paper: —

FOREST TREE PLANTING AS AN INVESTMENT.

More able tongues have talked: more gifted minds have thought; more ready pens have written upon the great future necessities of forest tree planting. But all the talking thinking and writing, have so far availed comparatively little. Why is it? Because too many look upon it as an act of benevolence, thinking they must metamorphose themselves into a philanthropist before they can set out a grove of forest trees. While a few perchance, will set it out with a feeling of pride; while others may do it for honour or fame. But is benevolence, philanthropy, pride, honour or fame, the motive power that impels the progressive car in this the nineteenth century? No! It is money,—the love of money, or the anticipation of money. Then let us consider tree planting in its true light; a light that will illumine the mind of every American citizen. The light of money making. Yes! if we do that, we strike the keynote, whose music will vibrate throughout the length and breadth of our western plains. Our capitalists, east, west, north or south, all invest their money for the purpose of increase; their sole object is to accumulate. Our merchants do not invest their money in drygoods and groceries, and work and worry over their business for the sole purpose of accommodating their friends and neighbours with the necessaries of life. The capitalist does not invest in bank or railroad stock with the spirit or feeling of a philanthropist. Vanderbilt, Garret, or Gould does not extend railroads over our plains, or along our valleys, for the purpose of assisting the poor granger to get his few bushels of corn or wheat to market. The millionaire who has his palatial mansion, and is enjoying all the comforts of life, does not invest his surplus capital in corner lots, fine dwellings or massive blocks, for the purpose of beautifying the city or giving his poor neighbour a home. We do not invest in electric lights or telephone stocks to make the blind see, or the deaf hear. But in each and everyone of these investments, the one great object is to make money. Then if this is the motive power in everything that is progressive, it is folly to look at tree planting in any other light. And in that light alone; yes in that electrofying light, we shall for a few minutes consider tree planting. For we think without being in the least egotistical, we have the power to show that forest tree planting will make a safer investment, and bring in larger and more satisfactory returns than any other business that man can embark in. But in this enterprise you cannot sow and reap the same year; you sow in your prime, and reap in your decline, and to the benefit of your children who follow after. And to illustrate this point and to show it in the most practical light, we will take a kind and thoughtful parent; who has a bright and promising son of five summers, in whom he takes a great interest, and wishes to see comfortably started in business when he attains the age of twenty-one. Having five thousand dollars which he wishes him to have at that time—sixteen years hence—and wishing it to increase as fast as possible in that time, he very naturally asks himself, "how shall I invest it so that it will not only be safe but increase in the greatest ratio?" Government bonds are safe; but then the interest is so very small that his capital would only increase about three thousand dollars in the sixteen years, even at compound interest. He next investigates a real estate mortgage bearing six per cent. interest. In this he finds his capital would only be about ten thousand when he wants to use it, but the father being desirous of a large increase, looks beyond bonds and mortgages, and beholds the treeless plains of the great west, which is fast settling up by the industrious emigrant; he sees that building material, especially fence posts and railroad ties are in great demand, and that demand is fast increasing, while the material is decreasing in an equal if not a greater ratio. He beholds a glorious future for the tree planter, his mind is now fully made up; he will invest his five thousand dollars in western lands and forest trees. He selects forty acres of good tillable land, for which he pays

eight hundred dollars ; and encloses it with a good substantial fence, for which he pays two hundred dollars more, leaving four thousand dollars of the capital yet uninvested. He now puts the entire forty acres under a good state of cultivation, preparatory to setting out in forest trees. He is somewhat at a loss to know what species of trees to plant, but he decides that it must either be, Catalpa, white Ash, Russian Mulbury or black Walnut, but as his land is situated south of forty-four degrees north latitude, and fence posts and railroad ties being in the greatest demand and the most profitable of any wood he can raise ; and the Catalpa having no superior for that purpose, (the timber lasting a century) and being a hardy tree and a fast grower, he decides that that shall be the tree. By adopting the usual plan of setting four by four feet each way, it will require twenty-seven hundred trees per acre, or one hundred and eight thousand to set the forty acres. He finds that to prepare the ground, buy or raise the trees, set them out and cultivate as long as they require any attention, it will cost about one hundred dollars per acre, or the remaining four thousand dollars. He has now the entire capital invested. Let us look for the returns. The weeds and grass being kept down, he will let nature take her course, do her own trimming and pruning until they are eight years old. Of course the results are only imaginary, based upon the knowledge and experience of others, but we propose to be very liberal in our estimates. We will in the first place calculate on a loss of twenty-five per cent., that is we will suppose that by the extreme changes of climate, twenty-eight thousand have either died or been so stunted as to be worthless, which leave just eighty thousand good thrifty trees eight years old. It now becomes necessary to remove one-half of them, or forty thousand. Each tree making at least one good fence post. A Catalpa post, even an inferior one will always bring a good price, say twenty-five to thirty-five cents, but we will put them down at twenty cents each ; calculating that the remaining timber of the trees being utilized for fire wood, will pay for cutting and removing the posts. We now have forty thousand posts at twenty cents each, making a total of eight thousand dollars. The remainder of the trees are left standing eight years longer or until the son attains his majority, and is ready to start in business. The father puts the axe-men at work to remove them and convert them into ready cash. We of course have again to let imagination, experience, and precedent do the calculations. We cannot take isolated cases and make comparison or we will estimate too largely, for we have heard of Catalpas sixteen years old, being twelve to fourteen inches in diameter, which would make two or three railroad ties, or ten or twelve fence posts, but as we would sooner be below than above, we will say that there can be realized on an average four good posts per tree, or one hundred and sixty thousand posts, which at twenty cents each, would amount to thirty-two thousand dollars ; added to what we have from the first thinning we have a grand total of forty thousand dollars, or over forty per cent. per annum for the entire time.

Now I know that these results look incredulous, especially to a person who has never given the subject any thought ; but the experience of many under the sound of my voice to-day will bear me witness in these statements, and claim that even greater results can be attained, while others who have been reared in the woods, cradled in a sugar trough, and, per chance, housed in a hollow tree, and spent the prime of their lives in cutting and burning valuable timber with no conception of its value, may say that twenty cents for a fence post is an enormous price, and the average farmer cannot afford to buy them. Well for the benefit of that class, let us make a large reduction and put a Catalpa post that will last a hundred years at the same price of a Cottonwood that will not last two years—ten cents each—and yet we have twenty thousand dollars, or about twenty per cent. per annum, two or three times as much as could be realized in bonds or mortgages. But it is unnecessary to make any such reduction. Ten millions of Catalpa fence posts could be sold in Kansas to-day at twenty-five cents each, and as many railroad ties at double the price of an oak.

In making the above calculations, we have said nothing about the land after the timber had been removed, neither have we said anything about taxes, so we will allow one to offset the other.

We have also confined ourselves to dollars and cents, and said nothing about the pleasure and comfort derived from shade and windbreaks. But the mission of this article

is not to picture the beauties and pleasures of forest groves, or to calculate the untold value it sustains to fruit orchard, grain field, or pasture lots, but it is to show just how many dollars and cents can be realized in a certain number of years, by raising timber for commercial purposes.

Discussion followed, in which the following persons participated viz. :—Mr. Suel Foster, Prof. Northrop, Mr. Burson, Mr. Minier, Prof. Lazenby, Dr. Hough, Mr. Hicks, Mr. Thayne, and Mr. Deam.

Prof. Adolph Leué, of Cincinnati, O., read the following paper :—

FORESTRY EXPERIMENTAL STATIONS.

Forestry is both a science and an art. As an *art* it embraces the methods of planting, sowing, cultivating and managing forests for profits; this may conveniently be called *practical forestry.* As a *science* it investigates the principles upon which practical forestry is or should be based, and this may in contrast to the former be termed *scientific forestry.* Practical and scientific forestry are however inseparable and must go hand in hand, unless the former become a mere drudgery and the latter an abstract science. This conception of forestry makes a simultaneous development of both practice and theory imperative.

Now, it is a fact that under the existing circumstances in this country the nearest future of our forests will depend upon our farmers, who almost exclusively constitute the owners of property that is available for forest culture. In order, therefore, to make a development of this kind possible, either our farmers must be educated in science, or our scientists must become farmers. This, however, is impracticable, if not impossible.

Of this problem but one solution seems possible. As practical and scientific forestry, so the farmer and scientists must join hands. As soon as the farmers of our land begin to take an interest in the endeavours of forestry associations and scientists in the actual work of planting, cultivating and managing forests, we may hope for a system of forestry that shall be worthy of the name and reflect credit upon American foresters.

When that system is fully developed we shall have a thorough knowledge of *forest botany*, or the natural history of all forest trees that grow or may be grown in our land, and of all other plants that are either injurious to the growth of forest trees or that are of economic value to forests ; we shall be well acquainted with *forest zoology* or the natural history of all the species of the animal world which are either injurious or beneficial to forest and forest trees ; we shall understand the true nature of the forest soil, *i.e.*, we shall know what may and what may not be grown on a given soil ; we shall know which are the best methods of cultivating and managing forests in the way most profitable ; we shall have a minute knowledge of forest usufruct, *i.e.*, we shall be able to tell the various uses of all the different forest products and how to obtain them ; we shall be informed as to the influence of forests upon climate in the widest sense of the word, and know in what ratio the forest should stand to cleared lands.

An examination in each and all of these points, profitable as it might be, would, I fear, not be very agreeable. Let us, therefore, make no further inquiries as to what we ought to know, but consider the means of developing that system.

One of the most conspicuous tendencies of advancing civilization is to place the various mechanical arts upon a scientific basis. The beneficial influence of this tendency is most strikingly seen in the history of the development of agriculture. From the earliest time upwards to the beginning of the present century, it was a mere empirical art, resting solely upon the traditional maxims of experience, without any visible signs of progress whatever. But when in the first part of the present century Liebig and others subjected those ancient maxims of experience to a series of scientific investigations, new era began to dawn upon this most important occupation of mankind. Since then such investigations have been carried on in schools of agriculture, which have been

founded in all civilized countries, and have reached the highest point of perfection in the agricultural experiment stations. The results are most gratifying: for by means of these scientific investigations and systematic experiments agriculture has been elevated to the dignity of an exact science.

This hasty glance at the history of the development of agriculture plainly indicates the course to be pursued in the attempt to raise forestry, the younger sister of agriculture, to the same dignity. A very successful beginning has already been made in Germany and Austria, where the idea of forestal experiment stations originated. The great importance which the governments of those countries attach to these stations is seen from the fact that Germany alone expends about $30,000 annually for the maintainance of the same; and from the other that their number has been at a steady increase. Switzerland, Italy, Spain, and even Russia, are following the examples of Germany and Austria.

After this brief consideration of what should be done and of what is being done abroad, the question naturally arises: What are we doing in this matter, and what are we going to do?

There has certainly been no want of agitation on this subject, for the establishment of forestal experiment stations in this country has been talked of at different times and places; resolutions have been passed by societies of various descriptions, but to no effect. Such resolutions addressed to the Congress of the United States or to the General Assembly of the individual States, will, I greatly fear, be of no use, unless we accompany such resolutions with a practical plan upon which such stations may be organized. A resolution, accompanied by such a plan, has some chance of receiving a favourable recognition. If this plan, in addition to its being practical, should have the advantage of involving no great expenses, a favourable action on the part of our legislative powers may confidently be expected.

A still better course of proceeding seems to be, not to wait for legislative action, but simply to adopt that plan and then carry it into effect. This, gentlemen, has been the Ohio way of doing, for it may not be generally known that the establishment of a Forestal Experiment Station in Ohio has been resolved upon.

A detailed history of the development of Forestal Experiment Station in Ohio does not come within the narrow frame of this discourse, but briefly told it is this: A plan on which such station might be organized was proposed in a meeting of the Ohio State Forestry Association, held in the early part of last May, discussed in several meetings, found practical, and adopted July 21st.

The object of this Forestal Experiment Station in Ohio is the development of a system of forestry adapted to the wants of Ohio.

The station shall consist of a centre and an unlimited number of primary and secondary stations.

The centre of this station shall be the Ohio State Forestry Association, which shall appoint a director whose duty shall be—

(1.) To preside at all the meetings of the Committee on Forestal Experiment Station.

(2.) To ascertain the wants of forestry in Ohio and to institute the necessary experiments and investigations; in this he shall consult with the committee.

(3.) To prepare plans of experimenting and to devise formulas for recording the work performed at the primary stations.

(4.) To represent the Ohio Forestal Experiment Station both at home and abroad.

(5.) To attend to all the correspondence connected with the station.

(6.) To report to the Ohio State Forestry Association at each annual meeting in January the work performed at the station, and to give an account of the money expended in experimenting and investigation, and of all other expenses of the station.

(7.) To keep the society informed of the progress of experimental foresty elsewhere.

(8.) To submit at the annual meeting an estimate of the probable expenses of the station for the ensuing year.

The *primary stations* shall consist of at least three acres of ground each, which shall be devoted to experimenting; and the experiments on the same shall be made according to a definite plan, agreed upon by the committee on Forestal Experiment Station.

The *secondary station* shall be dovoted to general investigations; such as analysis of soil, the study of forest botany and forest zoology, testing the vitality of seeds of forest trees, determining the comparative value of forest products, such as tanbark, charcoal, etc., testing the adaptability of wood for mechanical and technical purposes.

The director of the Forestal Experiment Station, the superintendents of the primary stations and all having a secondary station, shall constitute the committee on Forestal Experiment Stations. This committee shall meet at least once a year.

Each primary and each secondary station that may be adapted for forestal meteorological observations shall be provided with the necessary instruments for such observations.

The Ohio State Forestry Association shall appoint a finance committee, of which the director of the station shall be a member.

How can this plan be carried into successful operation? is the next important question. The nearest future of our forests depends, as I have already stated, upon our farmers, who almost exclusively constitute the owners of property that is available for forest culture. They are, therefore, the first to reap the benefit of a rational system of forestry; are thus directly interested in Forestal Experimental Stations, and should on that account do their part to make the enterprise a success. By direct inquiry it has been ascertained that there is a sufficient interest amongst our rural population to encourage the Ohio State Forestry Association in its endeavours. We already have the promise of four of our most intelligent and well-known farmers and arboriculturists that they are ready and willing to devote any reasonable amount of land for experimenting in forestry and to carry out the experiments. Ohioans, as a rule, are not slow to discern what may prove to them an advantage. The performing of an experiment is to him who undertakes it, an excellent school of forestry, which not only charges no tuition, but rewards him with at least a nucleus of a forest, which will greatly enhance the value of his farm. We do, therefore, not anticipate any difficulties in our endeavour to dot the whole State of Ohio with primary stations.

It is, however, not only the farmer who will be benefited by our experimental station; the followers of the mechanic arts are interested in more than one way.

(1.) An abundance of forests and a cheap method of raising them will have material effect upon the prices of the raw forest products, which in many instances almost entirely constitute the material upon which such industry depends.

(2.) One of the objects of the Forestal Experimental Stations is to find new uses for the various forest products, and new forest products for certain purposes.

It is, therefore, to their own advantage if these several industries aid the association to make this department of the station a success. The fact that we have the promise of one secondary station, with fair prospects of more, assures us of success in the mechanical division of our station.

We have had some grave apprehensions as to the scientific department, which, as we proceed, will be made to consist of a *chemical*, a *physical*, a *botanical* and a *zoological* division. But there seems to be no reason why we should entertain any fears whatever. We ask scientists to aid us, and as a recompense we offer the material for researches, and to publish the result of such investigations. We also contemplate to offer prizes for certain investigations.

As our great object is to hasten the development of a system of forestry adapted to the wants of Ohio, we justly demand that our primary stations be located within the boundaries of that State. The secondary stations, however, which are of general interest, may be located anywhere in the United States, in Canada, or even in Europe, if it should be of advantage.

We contemplate to commence this work as an association, not because we believe it to be the best or only course, for we are persuaded that as this is pre-eminently a subject of general interest, it is the duty of the State to institute and to carry out such experiments, but we intend to take the initiative, because we feel the great need of such an institution, and because we desire to illustrate the practical working of the same. Such station or stations may be established as separate State institutions, and superintended or directed by a State forester or commissioner of forestry, or they may tached to agricultural colleges as a special institution.

Whatever may be said against this plan of organizing forestal experiment stations, let it be remembered that it may, and indeed will, be perfected as we proceed to carry it into operation. With its defects it has some advantages which may thus be summed up :—

(1.) It is adapted to our circumstances.

(2.) It is exceedingly simple.

(3.) It enables us to perform the experiments where they are most needed.

(4.) It gives us the very best force that can possibly be obtained for primary as well as secondary stations.

(5.) It is cheaper than anything of the kind that has yet been proposed.

(6.) It fills all the demands that can reasonably be made on a station.

(7.) It is a plan that makes a simultaneous development of scientific and practical forestry possible.

Discussion followed, in which the Rev. Mr. Egleston, Mr. Minier, Mr. Higley, Dr. Hough, Prof. Lazenby, Prof. Leué, Prof. Northrop, and Commissioner Loring, participated.

Dr. Franklin B. Hough, of Lowville, N.Y., read the following paper :—

FORESTRY EDUCATION.

By T. B. Hough, Ph.D.

Using the term "education" in its broadest sense, as the imparting of knowledge in any mode or form, and assuming that knowledge is indispensable to success in any pursuit in life, we may be allowed to consider some of the means by which instruction can best be given in matters relating to forestry, in order to secure the greatest advantages to the greatest number who may have occasion and opportunity to apply this knowledge.

The special schools of forestry in Europe are, in some instances, elementary, and almost wholly practical in their character, and are intended for no higher purpose than to prepare young men to serve as foremen of working parties, and as forest guards. They are expected to know when the work entrusted to their care is well done ; to see that there is no needless waste of material or of time ; and if the work is done by a contractor, but subject to their inspection, they are expected to know whether the terms of the contract are faithfully observed. They must be taught the protection of game, and the prevention of trespass and spoilage, in whatever form it may be attempted, and must understand enough of the first principles of administrative law to draft a formal complaint as the first step in a prosecution, whenever this may become necessary within the district under their charge. It is only in extraordinary cases that persons thus trained find opportunities for advancement, and they reach the highest point of their ambition when they have done their work well.

But the schools for technical instruction in forestry, of which we find some thirty or more under the patronage of government, in various countries in Europe, have a much higher mission. They take their students after they have finished a course of study in the public schools, and sometimes besides this after they have had a period of actual service in forest labours, under skilled direction, and they endeavour, with this beginning, to impart a course of theoretical and practical education that is carefully adapted to meet the future wants of the forest officer in every grade of the service, and quite as special and technical in its nature as in our naval and our military academies. When this course is completed they are not always then sure of immediate appointment, but must wait for a vacancy in the service. The place once secured, there is great certainty of its permanence, and a reasonable prospect of advancement as circumstances may favour, or as talent may deserve.

I have thus briefly sketched the object and the motives that lie at the foundation of forestry education in Europe. They apply to countries having large tracts of woodland, in charge of a government or belonging to great hereditary estates, and they are carefully

and well devised to meet the wants of these countries, by preparing skilled agents for the management of the interests concerned.

With us, a difference of laws, and in the tenure and inheritance of property, and the perfect freedom to every owner of land in the management of his own estate, must necessarily occasion a wide departure from these methods of special education in its relations to forestry, in order to adapt it to the wants and requirements as they exist among us. I will therefore invite your thoughts to certain points to be considered in connection with forestry education in our own country, and enquire as to the duties that may arise in providing the kind and degree of instruction that will be of greatest practical service.

And first, we may remark, that we do not for the present, and perhaps for many years to come, require a class of persons who have been specially trained to the degree that is deemed necessary in the better class of forest schools in Europe, because such persons could not find employment either in charge of public or private forests at the present time. In a journey through Europe and in visiting many of these schools in 1881, I made inquiries about students from America, and so far as I could learn there had been but one from their first beginning, and this one had but recently entered at Thavand. Of the very few graduates who have come to America, everyone has, I believe, been obliged to seek other employments : and upon quite a number of occasions in which students or recent graduates have asked my advice about the opportunities for professional employment in America, I have in every case discouraged them from coming, unless prepared to seek some other pursuit than systematic forestry. A time may come when it will be desirable to seek for men well versed in science, who are capable to conduct series of observations at an experimental station, or to manage the forests upon the public domain, should they be put under regular management, as I have urged in my reports, but that time is not yet.

I am well aware that this measure of the establishment of special schools of forestry has been urged upon Congress, and that Saint Paul has been mentioned as a proper place for its location. It certainly might as well be there as anywhere. But let me enquire: Where would the graduates, if trained to the highest degree and fitted to accomplish all that those can who leave these schools in Europe, be able to find employment ? Neither the general nor the state governments have any systems of forest management needing their services. There may be a few railroad companies who would employ one, but this is not certain, and as to private estates, I know of none upon which such a person would be likely to find an engagement. A time may come when this want may arise, but it has not yet arrived.

Should experimental stations come to be established, they should of course have men of the highest qualifications ; and they would need a considerable amount of hand-labour. In this, preference might be given to young men wishing to acquire skill in planting, and thus these places might become in time the nuclei of schools of practical forestry, but these too belong to the future. Let us then return back to the present, and consider what are the existing needs of the country in the matter of forestry education, and how they can best be supplied.

If we do not need a high degree of special training for a few, we certainly do need a certain amount of instruction of a practical kind for a greater number. We can altogether dispense with the whole of what is taught in the forest schools of Europe, upon the jurisprudence and the administration of forest codes, and the adjustments of rights of common usage. We can leave out what they teach concerning the protection of game. There is a great deal taught concerning "*aménagement*," that is, the working of a forest through a future given period, upon plans first carefully studied, and which, when once adopted, must be observed to the end, which do not find application in American forestry. There are studies in topography and engineering, drawing of maps, construction of reservoirs, dams, and various hydraulic operations, including leveling for drainage, the building of sawmills and the like, which, however useful, do not necessarily require more than now taught in our best institutions in courses of study already in operation.

Let us now come to consider what we do want, and how this want can be best supplied, and in this we will begin at the lowest and broadest stage of education, with what our children should learn in their families and in the common schools.

They should be impressed with the idea that the woodlands are not less useful to human welfare than the cultivated fields; and that like them they should be protected from injury or waste, as well from fires as from other causes. They should be made to understand that the birds nesting in our groves are, almost without exception, our friends, and therefore entitled to protection. Under a competent teacher they can be interested in little schemes of planting and rural adornment around the schoolhouse and at home, and this without the formalities of a lesson from books, or under the semblance of a task imposed upon the unwilling, but rather as a reward of merit. These first ideas so easily instilled into the minds of children, leave the most durable impression, and remain through after-life, at least in the way of pleasant recollections of happy hours, and they may and should create a sympathy with nature that the hard realities of life can never wholly efface.

A skilful and competent teacher might now and then by way of pastime, require the scholars to bring in specimens of woods, and leaves, and flowers, and fruits, and ask them to tell all they knew or could find out about them. The uses of things might be explained, and some idea of the order and harmony of nature thus imparted, might awaken observation, and a habit of inquiry, and a desire for knowledge, that might have otherwise lain dormant. An hour or two in a week devoted to this kind of teaching by object lessons, would bring about the best results, and the school boards could well afford to pay something above the current wages to the teacher who could do it well.

This simple and elementary instruction might not go far in the way of education in forestry, but it would be a good beginning, as far as it did go it would be in the right direction. In mountain rills the source may be small, and a feeble obstruction may give the first direction to the stream that finally becomes the river. It would at least impart some knowledge of the names of things, and impress the truth that every part of a created object has its uses, and that nothing is formed in vain.

We have been obliged, in speaking of the teachers of our primary schools, to use the words "skilful and competent," preceded by an "if," because it is painfully evident that they do not apply to them all. And this leads us directly to the next point we have to consider, namely: That our Normal Schools, where these teachers are prepared, do not as yet afford that instruction upon these subjects, that should impart that skill and competence that we need. There should be introduced in the way of classroom recitations, or by lectures, or otherwise, a little practical instruction upon the ways by which the children of a common school may be interested in these habits of observation and inquiry, and instructed in the rudiments of knowledge about the productions of nature which are around them. This is done already to some extent in various normal schools, and it might be done with profit and to a further extent in them all.

The cabinets of these normal schools, should contain specimens of woods, and of the leaves, blossoms and fruits, and the students might be exercised in distinguishing the different species by the bark, the wood, and the general habit of growth, of the trees of common occurrence around them. The grounds of such institutions should have labelled specimens of living trees, grouped in their natural relations, and in as great a variety as their extent, and the soil and climate would permit. Some correct ideas might also be imparted, as to the time and method of planting, the requirements of particular kinds of trees, and the like, and the classes of young men might be taught in a practical way, some of the first lessons in forest economy that are most useful in after life, or that might be again imparted when they go forth to teach. In these lessons, instruction might be given as to some of the relations that exist between forests and the climate, the incidental benefits conferred by woodlands upon agriculture, and some of the economies that may be practised in the planting and care of trees.

Our high schools and academies might in like manner and to an equal or greater extent, impart instruction upon things useful to be known, and with the very best effect. Under zealous and competent teachers the students might be interested in the formation of collections of various kinds, and be taken occasionally upon little excursions into the woodlands, where opportunites for practical instruction are afforded on every hand. This method of education by means of excursions under the guidance of teachers, which is quite common in certain schools in Europe, and is a prominent one in all schools of

forestry, should be more generally practised among us, and no summer term should pass in these institutions without one or more of them being had.

In the various grades of schools that have been noticed, an arbor day should never be allowed to pass without being duly celebrated, with ample preparations beforehand, and it would add not a little to the interest in the custom, if the care and protection of particular trees were assigned to particular ones of the number, who would be expected to give their charge all needful attention by watering in a dry time, through the first season, and by such further attention as their wants might require.

In the various grades of instruction, suitable prizes might be offered for proficiency and merit, and the best results shown in a county or a state, should be rewarded by distinguished mention in the official reports.

Passing from these institutions of the middle class, to those of higher grade, we come to the colleges and universities of the country. Some of these from their location, or on account of their special object, may offer no opportunity for instruction in forestry in any form; but with much the greater number, more or less might be done, without burdening the course of study as already prescribed, or requiring more time than is now allowed.

In the course of instruction in chemistry, botany, natural history, physics, mathematics, meteorology and the like, the application of these sciences to questions in forestry might be noticed, as opportunity occurred. A course of lessons in the class-room might be prescribed, as is already done in several of our colleges, as at Dartmouth, and in the Michigan University. The remarks already made concerning collections for the cabinet, and a labeled arboretum, might apply on a more extended plan, corresponding with the more enlarged field of operation and greater opportunity; and no class should graduate without hearing at least one course of a dozen lectures by a person thoroughly qualified for presenting a concise general outline of the whole subject of forestry.

I have thus briefly presented the leading features which I think might be grafted upon our existing system of education, without creating new institutions, or much enlarge the operation of existing agencies. The plan I propose would embrace the whole country, and include in its operation every person who is to become in a few years an owner of the lands upon which our forests must in future be grown. It is no doubt imperfect, but it would be a fair beginning, and its details could be modified from time to time, as experience might suggest. It applies chiefly to the young, but this is the class that learns. It is often said, and there is too much truth in the saying, that a man in middle life or in old age can learn nothing. But these men are passing away, and our greatest hope depends upon our ability to prepare those who are to come after them, to discharge their whole duties, as well in this as in every thing, in such a manner as to do full justice to themselves as to the commonwealth whereof they form a part.

Discussion followed, in which Mr. Foster, Judge Higley, Prof. Budd, and Mr. Minier, participated.

The hour for adjournment having arrived, the Congress adjourned until to-morrow, at 9 o'clock a.m.

Second day, Morning Session, August 9th.

The hour for meeting having arrived, the President assumed the chair, and the Congress proceeded with the reading of reports from committees as previously arranged.

Prof. Adolph Leué, from the committee appointed at the Cincinnati session, in April, 1882, to report upon Forestal Experiment Stations, presented a report, as follows:

Report of the Committee on Forestal Experiment Stations.

In consideration of the existing circumstances of this country, as—

1. The absence of state forests;

2. The want of trained foresters;

3. The non-existence of forest academies; and,

4. The comparatively little importance which the Legislatures of almost all the States have attached to experimenting in Forestry;—

Your committee most respectively submits the following:

I. That the members of this Association individually urge, in their respective States, the necessity of establishing experiment stations.

II. That this Association, as a body, or through a committee, memorialize the General Assemblies of their respective States, and in this memorial urge upon these bodies the need of such stations, and the practicability of establishing them in various places in each State.

III. That the Ohio plan of organizing such stations, on account of its being exceedingly practicable and thorough, be recommended as the most suitable to our circumstances.

IV. That the Forestal Experiment Station, consisting, as it does in Ohio, of a centre, of primary and secondary stations, may centre most appropriately in the agricultural colleges.

V. That a standing committee on Forestal Experiment Stations be appointed for the ensuing year.

(Signed) ADOLPH LEUÉ, *Chairman*,
FRANKLIN B. HOUGH.

Upon motion of Prof. R. B. WARDER, the above report was accepted and adopted.

Upon motion of Mr. J. H. MORGAN, the Congress resolved that the memorial provided for in the report be also addressed to the Governments of the Dominion and the Provinces of Canada.

The Chair appointed Prof. A. Leué, Mr. J. H. Morgan, and the Rev. N. H. Egleston, as such committee.

It was further ordered that a committee upon Forestal Experiment Stations be appointed, and the following persons were named as this committee, viz: Rev. N. H. Egleston, Mr. R. W. Furnas, Prof. Wm. Saunders, Mr. Leo Weltz, Mr. Warren Higley, Prof. R. B. Warder, and Prof. Adolph Leué.

Dr. FRANKLIN B. HOUGH, from the committee appointed at the Cincinnati session, in April, 1882, to memorialize State Legislatures upon the establishment of State Forestry Commissions, presented a report, as follows:

REPORT UPON THE ESTABLISHMENT OF STATE FORESTRY COMMISSIONS.

The undersigned, being members of the American Forestry Congress, appointed to prepare a memorial upon the establishment of State Forestry Commissions, having consulted as opportunity offered, would respectfully recommend the following draft of a communication, which, if approved by the Congress now in session, might be addressed to the Governors of the several States (and with proper change in the direction, to the Governments of Canada), with the request that the same be transmitted to their respective Legislatures for consideration.

FRANKLIN B. HOUGH, *Chairman*,
WILLIAM R. LAZENBY.

To His Excellency, the Governor of——————:

SIR:—The American Forestry Congress, having, by a committee of its members, prepared a memorial to the Legislatures of the several States of the American Union, and to the Provincial Parliaments of Canada, upon the subject of establishing State and Provincial Forestry Commissions, adopted the same, after due deliberation, at its session held in the city of Saint Paul, Minn., on the 9th day of August, 1883, and as to the former, requested the Commissioner of Agriculture to transmit the same to the Governors of the

several States, with the request that it might be referred to their respective Legislatures for consideration.

The inclosed communication is addressed to you in pursuance of this intention, with the request that, if approved, you will refer the same to the Legislature at its next session, with such recommendations as you may deem proper concerning it.

Very respectfully, your obedient servant,

———————.

To the Honourable the Legislature of the State of————:

The American Forestry Congress would respectfully invite the attention of your Honourable Body to the importance of giving early attention to measures tending to the maintenance of our forest supplies.

The very important relations that exist between a due proportion of woodlands an our agricultural welfare, resulting from their influence upon climate; their protection from drying winds and their effect in the equalization of water supply, for navigation, hydraulic power, and the use of cities and towns, are worthy of serious attention, and present questions that may properly claim the notice of a legislative body.

It is well known that in every country upon the continent of Europe, systems of forest management, originating from necessity, have grown up, and that codes and regulations for protection, working, and restoration have been devised, and matured as experience led, until they have become, in a great degree, adapted to the conditions and wants of their inhabitants, and to the requirements of their governments, in matters o timber supply.

Although, from the differences that exist between the American States and the countries of Europe, as well with respect to the tenure of the land as the structure of the laws, which would prevent any one of the European codes of forestry from being applied in America, still there are strong reasons for urging the adoption of carefully devised measures for promoting the maintenance and renewal of our forest supplies.

Since in the States and Territories of the United States, as well as in the Provinces of Canada, most of the settled portions of the country belong in fee-simple to private owners, who are usually the actual occupants; and since the entire cost and care of management of the woodlands upon these estates must devolve upon these owners, it is evident that there can be no more effectual means devised for promoting this object, than by the diffusion of correct ideas among the owners of these lands, with reference to the forest interests of the country.

In the case of fisheries, another element of national wealth, in which our citizens, in their individual capacity, have a great interest, although the Government itself can scarcely be said to have property, it has been found that great public benefits have been derived from the information obtained and disseminated through the agency of State Fishery Commissions.

The investigations made by Government in this matter, have been far beyond the means of individual enterprise, or even of associated private effort, and the operations of breeding, stocking distant waters with improved species, protection, maintenance, and restoration, which have been carried on, in a large degree, under the patronage and intelligent direction and advice of State Commissions appointed for this purpose, have greatly enhanced the value of our inland fisheries, and promise still greater benefits in the future. These Commissions of Fisheries exist in all the principal States of the American Union, and in Canada, and their benefits are realized more and more every year, as we learn their results.

In the case of our woodlands, we find in matters of public policy, and the promotion of the common interest, a strong resemblance with the case above cited. Information is to be collected; investigations are to be made upon questions before unknown; the introduction of new species is to be encouraged; improved and economical methods are to be made known, and the public interest is to be awakened and maintained.

Although it would be obviously inexpedient and improper to confer authority upon a commission with respect to the control and management of private property, unless in

exceptional cases where a public interest was concerned, there are many ways in which it could very greatly promote the general welfare, among which we may specify the following:—

1. It might institute and conduct experimental stations, either upon lands specially acquired for the purpose, or with the concurrence of institutions of learning, where facilities exist, and the conditions are favourable. We would especially mention the colleges for instruction in agriculture and the mechanic arts, in the several States, formed separately or in connection with colleges already existing, under a grant from Congress, as proper places for aiding in these experiments. The co-operation of individuals might doubtless be secured in many cases. These experiments should embrace, as well questions of culture and management, for the discovery of best methods, as matters of scientific interest, including the study of the local climate in its relations to Forestry.

2. It might establish nurseries for the supply at cost, or otherwise, of approved species of young trees, especial care being taken to offer those only which afforded the best prospect of success, and the most useful product. These young trees (or in some cases tree-seeds), should be accompanied by plain and simple directions for their care and management, and the persons receiving them should be requested to report the results.

3. It might stimulate competition by the offer of prizes, for plantations remarkable for their extent or excellence, or for success in overcoming difficulties in planting.

4. It might reward the authors of approved essays, tending to make known improved methods, or to awaken an intelligent interest in Forestry, or to disseminate useful information upon any subject therein, calculated to promote the general welfare.

5. It might collect statistical and scientific facts, having reference to Forestry in its various economic and scientific relations, with the view of furnishing information in answer to private inquiry, or by way of public reports.

6. It might promote an interest in the subject by the holding of public meetings, addresses, and the discussion of subjects relating to Forestry and rural economy.

7. It might establish at its central office, a reference library, and collections for illustrating the various subjects pertaining to Forestry; and it might very materially aid, by advice and otherwise, in the formation of similar means of reference and information, at institutions of learning, and other agencies of public utility.

8. And, finally, it could carefully study the subject of Forestry, as it may grow in importance, with the view of recommending for legislative action such measures as may be deemed proper for meeting the wants of the country in this matter, as it comes to be better understood.

It is presumed that intelligent, capable, and public-spirited citizens might readily be found in every State, who would be willing, without pay, to give reasonable attention to this subject, by attending stated meetings of a board, their actual expenses being paid. With a capable and intelligent secretary, devoting his whole time to his duties, upon reasonable pay, we might confidently expect that such a board would in due time become a centre of influence, and an important agency for good; sustaining the expectations that gave it being, and abundantly repaying its cost in an advancement of the public welfare.

Upon suggestion by the President, that this memorial might be transmitted from the Department of Agriculture, with its suggestions tending to give it greater effect, upon motion of Dr. Hough, seconded by Prof. Northrop, it was so referred, and the report was accepted and adopted.

The Hon. H. G. Joly, of Quebec, from the committee appointed to report upon Forest Fires, and the injuries to Forests by cattle, made a partial verbal report. He stated that copies of the report of the committee appointed at the last session of the American Forestry Congress (August, 1882), for the purpose of drawing the attention of Government to the question of protection to the forests, were sent to the Federal and to the Provincial Governments of Canada, several of whom took immediate action. Ontario passed a law for the encouragement of the planting of forest trees, and voted a consid-

erable sum for that purpose. Quebec passed a law, as recommended by the Forestry Congress, for classifying public lands under two heads: Lands for cultivation and lands unfit for cultivation, but growing pine and spruce, which are to be reserved for lumbering purposes. Quebec furthermore amended the laws already existing for protection of forests against fire, adopting a great number of suggestions offered by the Forestry executive committee, among others, appointing a superintendent to watch over and guard against fires. The Province of Nova Scotia passed last winter a law very similar to the preceding, and designated an Arbor Day.

Prof. Robert B. Warder, from the Committee upon Forestry Education, appointed at the Cincinnati Session in April, 1882, made the following report, which was accepted and adopted:

REPORT OF THE COMMITTEE ON FORESTRY EDUCATION.

Many difficulties attend the discussion of this subject, many opinions prevail, and years will be necessary to work out in detail an educational system, in which the claims of Forestry shall be duly recognized. Your committee respectfully submits the following propositions:—

I. One or more special schools of Forestry may eventually be organized, modelled in most respects after those of Germany, but (like other American technical schools) demanding a less amount of general information, and linguistic training for admission. For the present, however, the business openings offered for trained foresters, are not such as to encourage a suitable number of students in such a course, even with the modifications proposed. For this reason, among others, we believe that it is not best to urge the immediate establishment of such a school.

II. We may expect the interests of practical Forestry to be promoted incidentally by those engaged in agriculture, rather than by those who are exclusively foresters; hence we recommend that courses of instruction in Forestry, as full and practical as circumstances admit, should be offered in the various schools for the promotion of agriculture.

III. Practical lectures before farmers' institutes, promise to be effective in communicating a large amount of practical information among those who will appreciate and apply it. It may be very desirable for State organizations to employ lecturers, and cooperate with the various local societies in this work.

IV. Local Experiment Stations, in which intelligent farmers unite in specified investigations, will have a real educational value,—both awakening a more general interest, and affording object lessons upon practical Forestry.

V. With increasing intelligence, and general information among the American school teachers, we believe they may do very much unofficially, to impart a love of trees, and habits of observation. An Arbor Day, designed for school children, as in Ohio, is a valuable educational means, though quite distinct from the arbor day designed for forest plantation, as in Nebraska and Minnesota.

VI. The agricultural press affords a wide opportunity for pioneer work in Forestry education. Much has been accomplished by the Forestry manuals in Minnesota and Kansas, and by the Iowa Forestry Annuals. It is a cause of regret, that so excellent a periodical as the *American Journal of Forestry* should be given up for want of patronage. We believe that monthly or bi-monthly Forestry leaflets, published as cheaply and scattered as widely as possible, may have a very useful influence. Such a publication may be offered in quantities to the local horticultural and agricultural societies, at the bare cost of paper and printing. We believe that a guarantee fund of $300 would suffice to insure such publications for one year.

Signed on behalf of the Committee:

Robert B. Warder,
Adolph Leué.

Mr. MINIER said that he wanted to see the interest in forestry become as contagious as the small-pox. Let American homes be made cheerful and interesting, he said, and we fear not for the future welfare of the people.

Mr. BURSON spoke of the existing ignorance upon the subject of trees, and urged that measures should be taken for educating the people in a knowledge, not of tree culture merely, but of the trees themselves.

ELIZUR WRIGHT referred to the progress which has been made in Europe in this matter, through the schools established there. This was an enterprise, he said, in which the old countries had gone ahead of progressive America.

Mr. MINIER believed in commencing the teaching of forestry to children at an early age.

Dr. HOUGH stated that forestry schools had been established in every country in Europe, upon the continent.

The report of the committee was adopted.

It was ordered that a committee upon Schools of Forestry be appointed, and the following persons were named as this committee, viz: Prof. B. G. Northrop, Prof. R. B. Warder, Mr. G. W. Minier, Mr. D. W. Beadle, Prof. J. L. Budd, and Dr. F. B. Hough.

Mr. G. W. MINIER presented the following recommendation, which was adopted:—

"In view of the widespread and happy results of the observance of Arbor Day in many States, this Congress recommends the appointment of such day in all our States, and in the Provinces of the Dominion of Canada."

Pending the adoption of the preceding, remarks were made by Messrs. Burson, Egleston, and Minier.

Judge WARREN HIGLEY presented a report upon the organization and operations of the Ohio State Forestry Association.

Dr. FRANKLIN B. HOUGH presented a verbal report of the action which had been taken in the State of New York, in reference to Forestry, which may be briefly summarized as follows:—

In 1872, a law was passed naming seven citizens of the State as a State Park Commission. This Commission consisted of Horatio Seymour, Patrick H. Agan, George H. Raynor, Wm. B. Taylor, Richardson, William A. Wheeler, Franklin B. Hough, and Verplanck Colvin. They were instructed to make inquiries with the view of reserving or appropriating the wild lands lying northward of the Mohawk, or so much thereof as might be deemed expedient for a State park. It is believed that the leading motive in this was, to secure the benefits to be expected from woodlands, in the maintenance of the water supply for the State canals, and for hydraulic power, which had been materially injured by clearings.

It was found, upon inquiry, that the State had only about 40,000 acres then in its possession in that region, the rest having been sold at nominal prices to timber operators and a railroad company. As soon as it was understood that the lands were wanted by the State, their owners showed a tendency toward combination, for the enhancement of values, and as the commission did not propose to become accessories to this speculation, they simply recommended a law forbidding further sales of these lands, and their retention when forfeited for the non-payment of taxes. In 1883—eleven years after this first law—the action then recommended was taken. The prediction had been verified, as now more than 600,000 acres belonged to the State, from neglect of taxes by the owners. This is only the beginning of a system of Forestry, since nothing was as yet provided for the management of the lands, except in one county only (St. Lawrence), where an agent

has been appointed to look after the interests of the State in the forests of that county. The law relating to tree planting along the highways has been very recently modified, and the germs of something that may grow into a kind of forest management, may be found in several local laws in various parts of the State, which provide that waste lands upon which taxes are not paid, shall become the property of the counties.

Very recently a call was issued for the holding of a convention for the formation of a State Forestry Association. The proceedings were merely preliminary, but three persons had been named to attend the present Congress and make a report. The speaker (Dr. H.) was the only one present.

Dr. HOUGH further remarked, that in the State of Vermont and New Hampshire, commissions had been appointed by law, and incipient measures were in progress for ascertaining the duty of these States, with reference to the Forestry question. As no representatives appeared from these States, he was not authorized to say what had been done, or what was intended.

The Hon. MARK H. DUNNELL, for many years member of Congress, and mover of the principal Acts that have been passed relating to timber culture and investigations upon Forestry, being introduced, addressed the Congress at some length, upon these subjects.

Mr. D. A. ROBERTSON presented the subject of publication of the proceedings, and suggested the appointment of a committee to memorialize Congress, with the view of procuring an appropriation for that purpose. Discussion arose thereupon, pending which the hour for recess having arrived, the Congress adjourned until 2 o'clock, p.m.

Afternoon Session, August 9th.

The Forestry Congress having been called to order by the President, at the hour appointed, Dr. FRANKLIN B. HOUGH, from the Commission appointed at the Montreal Session, in August, 1882, to report upon the subject of "Legislation in Relation to Forest Fires," made the following

REPORT.

The Executive Committee of this Congress was instructed, at our last meeting, to refer certain subjects for report on the present occasion, and, among these, "Legislation in Relation to Forest Fires," has been assigned to me for consideration.

We find, already, legislation of some kind, in nearly every State and territory of the Union, in Canada and other British colonies, and in every country in Europe. With the view of ascertaining what had been done in this line, I carefully collected our existing legislation upon this subject, and it will be found in my third report, in which this subject is considered with much detail.

The fact that prohibitions are imposed in any law, upon any subject, assumes that something is or may be wrong; and when we find penalties, the presumption is that they can or should prevent this wrong or injury from being done. We find neither prohibitions nor penalties against what is unavoidable; they are enacted only in cases where it is presumed that they will prevent some injury from being done, which might happen without them. Without spending a moment upon the origin of forest fires from natural causes, and which are fortunately of rare occurrence, we may attribute the greater part to human agency, and as originating either from intentional motives, or through carelessness or accident.

We find that fires are intentionally kindled, with the expectation that they will spread to more or less extent, in the following cases:—

1. In clearing land of its timber, as in the beginning of all settlements in wooded

countries, and occasionally, from time to time, in the ordinary operation of cutting off wood lots, and in lumbering.

2. For agricultural improvement, in the burning off of stubble and rubbish, to clear the ground for cultivation.

3. In certain operations in the woodlands, where it is desirable to get rid of the underbrush, by the aid of ground fires, so as to render it easy to get around, as in woods worked for turpentine, etc.

4. For improvement of pasturage in woodlands and waste places, by burning off the dead and dry herbage, and to favour the growth of the succulent grasses.

5. For exposing the ground, as in search for nuts or fruits, in prospecting for minerals and ores, and the like.

6. For clearing the ground of materials that might favour the spreading of ground fires, to the peril of buildings, fences or inclosed fields.

7. From a wanton desire to see a "big fire," but without intention to do injury, or with the expectation that no great harm will ensue ; or,

8. With malicious design, and for the purpose of destroying property, or of concealing a trespass ; or, in the case of hostilities, as a war measure, to injure an enemy.

The spreading and destructive fires, originating from carelessness or accident, may be kindled from any of the above mentioned causes, except the last, the escape being sometimes unavoidable, or beyond the means at hand for control ; and sometimes from want of common prudence and forethought, in leaving a fire, or some burning object, in places where a fire may catch and spread, as in throwing down a burning match or cigar, or in the use of gunwads in hunting, that ignite and retain the fire. They may spring from a neglected campfire, kindled for cooking or warming, or from a coalpit where charcoal is being made, or from fires or sparks dropped in any manner as notably in the case of sparks or coals from a passing engine on a railroad.

The extent of the disaster, however it may be started, will depend upon a variety of causes, chiefly the condition of the soil as to drought, and the force of the winds. A great deal will also depend upon the nature of the soil itself, and upon the kind of timber and other vegetation that grows upon it. Light sandy soils, when overgrown with evergreens of the coniferous species, and with the undergrowth that usually accompanies them are particularly liable to spreading fires ; while a heavy clay soil, or fertile loam, underlaid by limestone and shales, may favour the growth of deciduous trees, and a rank and humid undergrowth, in which a forest fire could scarcely be made to spread, and in which a disaster of this kind is scarcely ever known.

We also find that the season of the year has much to do with forest fires. They are seldom or never known in winter ; but in the early spring months, after the ground has become dry, and before vegetation has made much progress, we find the conditions dangerous. It is the same in a dry summer and autumn, and especially in times of excessive drought, and in high winds. At such times, when this aridity was intensified, the memorable fires of the Miramichi in 1825, and the forest fires in Michigan and Wisconsin in 1871 and 1881, occurred, with destructive energy, and wide spread ruin, consuming millions of dollars worth of property, and destroying great numbers of human lives.

We have started with the theory that prohibitions and penalties imply an avoidable cause. Let us consider, separately, how this will apply in the several classes of causes that have been above enumerated :—

1. In the clearing of land, a little judgment will enable the careful man to avoid a time for the burning of his brush when there is great liability to the spread of fires beyond control. But as some men have not this "little judgment" and this "care," it would be an effectual check upon their carelessness, if we had a law requiring them, before applying fire, to get a premission from some proper town officer, such as the supervisor, the selectmen, the trustees, or such other officers as the State laws recognize as the guardians of the public intrests of the town, and who would presumably be men of prudence and good judgment. They should also be obliged to notify their neighbours of their intention, so that proper watchfulness might be awakened, where the possibility of danger to adjacent woodlands might be apprehended. They might be still further

restricted absolutely from setting fires in certain months known to be dangerous in common or exceptionally dry years.

In this matter of burning brush, it should be more generally known, that it is not a very difficult thing to dispose of it gradually as the clearing progresses, by getting a fire well started, and then throwing the brush upon it. In the case of resinous woods, this may be done at once, and in the deciduous kinds, as soon as they are somewhat dry, but before they have become like tinder.

2. The danger from field fires, in the burning off of stubble and dead grass in fall or spring, as on the prairies of the west, may be greatly lessened by ploughing two belts of land and carefully burning off the rubbish on the strip of land between them. Where this precaution is taken, it is not difficult to keep these fires away from stacks of grain, buildings, and plantations, and it might, in these States, be well to require this to be done by law. Here, as in the case last mentioned, there is great need of prudence and caution, and in case of the least uncertainty, the advice and aid of others should be obtained. In this, also, there should be a prohibited season, wherever there is need.

3. In cases where it is thought necessary to clear the ground of underbrush, the need of caution and counsel is quite evident, and the subject should be placed under the restrictions of law.

4. The custom of burning off woodlands, especially in mountain regions, is one of the worst that we have to contend with in certain portions of the country. It is often practised by those who have a few cattle but no land, and who depend upon finding subsistence for their stock upon the unenclosed lands of others, or upon the public domain. There is nothing more likely to arrest this practice, than an efficient stock law, requiring every owner of stock of whatever kind, to keep them upon his own premises, under the penalties that may result from their trespass and damage upon the lands of another.

Where an owner thus sets running fires on his own lands, to improve the pasturage for his own stock, there should be a legal prohibition as to dangerous seasons of the year, and ample responsibility for the payment of damages that may result from his fires upon the property of others. The penalty of a fine is generally effectual, in the case of a land-owner; for the possession of an estate implies a certain degree of care, industry, and forethought in the owner; and such a person would realize the responsibilities of the situation, if fully known beforehand. But there is a class of men, and unfortunately it is a large one, who, having neither care, industry, nor forethought, and therefore no land, would care nothing for a fine, because they have nothing that the law could reach, if its collection was attemped. For this reason, any law imposing a fine as a punishment, with respect to the setting of fires that escape from their lands to the injury of others, should end with the clause: "or imprisonment for a period of —— days, unless the fine is sooner paid."

5. The clearing off of leaves by fire, for the purpose of exposing the ground, is most likely to be practised by boys in search of nuts, and who do not realize the danger that may result; or by those prospecting for ores and the like, who care as little for the consequences as the common tramp. It may not be a very common or a very important cause of these fires, but it should be forbidden on lands not owned by the person who sets the fire, and should, in this case, be coupled with penalties where it injures another.

6. In light sandy regions, and in cases where the pitch pine and other resinous woods form the principal forest growth, there are seldom many years together in which we do not hear of distressing accounts of woodland fires. They have been particularly disastrous upon Cape Cod, in the interior and eastern portions of Long Island, and in southern New Jersey. In these fires, we often hear of the burning of farm-houses, fences, bridges, mills, and other property, and they generally leave the soil greatly impoverished. In such regions there is a continued liability to the recurrence of these fires, whenever the conditions are a little more favourable to their spread, and nothing but continual care and watchfulness can prevent them.

In such regions, it is undoubtedly a good practice to keep the borders of the woodlands along the railroads, and around buildings, clear of rubbish and litter, by carefully burning off a strip of land in the winter, and when the fire can scarcely be made to

spread, and is easily controlled. Where this is done every year, the amount of combustible material is slight, and the risk is reduced to next to nothing.

It is, therefore, advised that legal provision should be made, requiring railroad companies to keep the rubbish and dead herbage, that might be liable to spread the fires, burned off every year, and forbidding them to allow piles of old ties and other combustible materials from accumulating or being left along their roadway.

7 and 8. From wanton and wilful burning, we have no hope of escape, except in the execution of proper laws against malicious mischief and deliberate crime.

Before considering the measures that might be recommended in our country for preventing by legal enactments the spread of forest fires, let us briefly notice what has been attempted, and what has been accomplished elsewhere. There is a district of country in southern France, some forty or fifty miles in extent, between Nice and Marseilles, and fronting upon the Mediterranean, that has, in former years, suffered often and severely from forest fires. The conditions were peculiarly liable to the occurrence of these fires, as well in soil and climate, as in the vegetation that covered the surface. The soil is rich, resulting from the decomposition of schist, porphyry, and granite. It is exposed to a ardent sun, and watered by abundant rains at the season most proper for giving exceptional vigour to forest vegetation, and, as the result, an abundant accumulation of litter. But it is also liable in certain seasons, to protracted drought; and in such a time, the least spark of fire, in a strong wind, would start a conflagration which nothing could stop, until the tinder upon the ground was burnt off. The forest trees in this region were chiefly chestnut, cork-oak and the maritime pines, and the undergrowth various species of broom, heather, and herbaceous plants that become dry and inflammable in a drought.

The repeated and ever-recurring damages resulting from these fires, led the Government in the autumn of 1868, to send the director-general of forests (M. Faré) to make a careful study of the causes of these disasters, and, if possible, to devise the remedies for their prevention. Having prepared a list of some two hundred names, selecting the principal proprietors and industriels of the district, he first addressed a circular of inquiries, and then convened as many of them as could attend, for the discussion of the subject, and the collection of data upon which conclusions could be formed. The results in the way of oral evidence and written opinions were published in detail. There were also separate publications upon the subject, the more important one being by M. Charles de Ribbe, who deals with great intelligence upon questions relating to the causes of these fires, their history, and the measures that should be taken for preventing them.

It was noticed, as to ownership, and incidentally as to the effect which this had upon surveillance and prevention, that the richest portion, and that chiefly devoted to the cork-oak, belonged to many small proprietors, while the poorer parts, covered with the maritime pine, and largely devoted to resinage, was owned by a few persons, some of them having tracts of several thousand hectares each. It was natural to expect that the former were better cared for, and that the greatest precautions had come to be adopted for preventing the origin of fires. But on the other hand, this parcelling out into small properties, is not favourable for concerted effort; as, in case of danger, every man would be most anxious to save his own, while the wealthy owners of large estates could more easily associate in the adoption of measures for their common welfare, and that a more systematic effort might bring a better result.

But, in the present instance, although there was a great diversity in ownership, and the woodlands were for the most part contiguous, or at least with no large clearings intervening, however diverse the local interest might be, they were menaced with a common danger. The inquiries undertaken in this instance, brought out, as might have been expected, a great variety of opinions as to causes and prevention, as each one reasoned from his own standpoint, and from the little circle of observation around him. They very generally agreed in this, that means should be devised for preventing their neighbours' fires from running over their own possessions, but were more or less widely variant as to the remedies that should apply to the whole.

As to the causes, M. Faré arranges them under two classes:—The one purely intrinsic and belonging to all woodlands, and the other exceptional, and produced by the special circumstances that have been already noticed. It was chiefly to the latter that these

sweeping disasters might be attributed, since two-thirds of the department, having a different soil and forest growth, but otherwise the same rains and droughts, and the same exposure to the sun, suffered no inconvenience from this cause.

The fires are generally started by careless hunters, by smokers, by charcoal burners, and very often from a practice of setting fires for the purpose of clearing off the mosses, herbage, brambles, and rubbish, in which it was generally intended to keep the fire smouldering under a covering of turf, but which in a dry and windy time might easily escape control.

This inquiry resulted in the enactment of a law, limited to twenty years from April 13th, 1870, the date of its passage, the leading features of which were as follows :—

The Prefect, with the advice of the General Council, was to fix the time in each year, within which no fires were to be kindled within the woodlands, or within 200 meters of their borders, for any pretext either of forestry or agriculture. Notices of this order were to be posted fifteen days previous to the forbidding season.

At times not included within this season, fires might be built, provided the space be inclosed by protecting trenches.

Between adjacent properties, a cleared avenue should be maintained, at the joint cost of the owners. The power of arresting offenders was extended, and vigilance, especially in the dangerous season, was increased. The fines were to be not less than twenty nor more than 500 francs ; but these were to be in addition to the damages that might ensue.

At a somewhat later period, frequent and disastrous fires occurring in the region of Landes, in south-western France, in the young pine forests, led to another investigation by direction of Government, by M. Faré, and an extended report was made, but not leading to any special law. In visiting this region in 1881, I learned, upon inquiry, that these fires had ceased to be troublesome, and was told that they had probably been set for a malicious end, a certain family owning extensive tracts of pine, being the heaviest losers. Through some financial failure, great numbers, acting under the advice of members of this family, had lost their little all, and to revenge this grievance, these fires had been set.

But returning to the question before us, as it is presented in the United States and Canada, and reasoning upon the assumption that destructive fires are very generally avoidable with proper caution, I will attempt to draft a bill, that with some modifications might be made applicable in any of the states, territories, or provinces, and which, if sustained by public sentiment, and properly enforced, could not fail to render these disasters less frequent, if they did not hinder their occurrence entirely. I will give it the title of—

"An Act to Prevent The Occurrence of Field and Forest Fires."

Be it enacted, etc.

Section 1. It shall be the duty of the Board of Supervisors (County Commissioners, or other authority in charge of the public business of counties), in districts liable to suffer injury from forest fires, to establish rules restricting the setting of fires in fields or woodlands, and forbidding them entirely, in what experience has shown to be a dangerous season of the year. These rules may be revised annually.

§ 2. In every township, the inhabitants, when assembled at their annual town meetings, may elect as many Fire Wardens as they may determine by a public vote. If there be more than one, the district of each one shall be described by roads or natural boundaries, a record of which shall be made in the office of the town clerk.

§ 3. It shall be the duty of the Fire Warden, in case of a spreading and dangerous fire, to take the chief direction of measures for arresting its progress, and he may order any citizen to assist in this labour, under the penalties hereinafter mentioned.

§ 4. In the absence of the Fire Warden, the supervisor (or other officer in charge of town business) may designate in writing some person to perform the duties of such Fire Warden, and the person so appointed shall have the same authority as if duly elected.

§ 5. In cases of great danger, a Fire Warden, with the approbation of a justice of

the peace, may order back fires to be set, or property to be destroyed, to stop the progress of the fires. Any structures so destroyed shall be paid for as a county charge.

§ 6. The expenses necessarily incurred in stopping the progress of a forest fire, shall be audited and paid by the Board of Supervisors (or other county board, as the case may be), as a county charge. It shall be lawful for the inhabitants at town meetings to fix the rate that may be paid for services in arresting a spreading fire, and to limit the total sum that may be paid; but in no case shall any allowance be made for services to any person through whose act or negligence a fire originated, nor shall payment be made for losses incurred, otherwise than as mentioned in the last preceding section of this Act.

§ 7. No person shall, at any time within the season prohibited under the first section of this Act, set fires in any field or woodland, for the purpose of burning brush, or clearing the land for agricultural purposes, or for improving the pasturage.

§ 8. No person shall, at a season not included in this prohibited period, apply fires in any field or woodland, for the purpose of clearing or improvement, without first obtaining permission from the Fire Warden of his district. He shall also notify any neighbours who may have fields or woodlands adjacent, and liable to injury, at least one day previous to the setting of such fires.

§ 9. No person shall kindle any fire in any woodland, or within two hundred yards of its borders, unless the combustible materials be first cleared away within six feet of the place where it is kindled; nor shall any such fire be left, until it is fully extinguished, or safely covered.

§ 10. In the making of charcoal, there shall be provided at least one barrel full of water to each pit, with pails in readiness for use in the case of a fire escaping and liable to spread. All combustible materials shall be cleared away to a distance of fifty feet from the pits or kilns in which charcoal is made.

§ 11. It shall be the duty of railroad companies, to cause the dead herbage, and other inflammable materials within their right of way to be carefully burned off once a year, at a time when this can be safely done, and with a sufficient force in readiness to prevent injuries therefrom.

§ 12. In districts where it is a common custom to provide against the spreading of field fires by ploughing strips of land, and burning off between them, such strips may be ploughed and burned once in a year, along the boundary of adjacent properties, and along lines of railroad, at the joint expense of the owners. In case that either of said owners, upon request from the other, shall neglect to do his share of the labour, it may be done by the other, and one-half of the cost thereof may be collected, as in an action for debt.

§ 13. And whereas, experience has shown that great benefits result from the maintenance of cleared avenues in a forest, for the control of forest fires, it is hereby enacted, that wherever a line of property between two owners runs through a woodland, and whenever the Fire Warden shall deem the measure necessary, he may direct the owners to clear and maintain such an open space, of not less than fifty feet in width, half of it being on each side of the line, and the expenses to be equally borne by the owners thereof.

§ 14. It is forbidden to throw down a burning match, or any lighted cigar or other burning object, in any field or woodland, without immediately extinguishing the same. It is also forbidden to use tow, or other material liable to hold fire, as a gunwad. It is further forbidden to discharge any firearms within a forest, during the period that is designated as dangerous by the Board of Supervisors (or other county authority).

§ 15. The following penalties are imposed for each violation of the provisions of this Act:

For disobeying the orders of a Fire Warden, from $5 to $50.

For setting running fires in the forbidden season, from $50 to $500.

For setting fires in the season not forbidden, but without permission from the Fire Warden, or notice to neighbours, $5 to $50.

For kindling fires in violation of § 8, or for neglecting the requirement in § 9, from $5 to $50.

For neglecting the requirement in § 10, from $5 to $10 per mile.

And in case of non-payment of fines, the person upon conviction may be imprisoned in the county gaol one day for every $2 of the fine imposed.

§ 16. It is further provided that in addition to the foregoing penalties, every railroad company, and every person, through whose act or negligence a field or forest fire originates, shall be liable to pay the damages which such fire may occasion.

§ 17. And be it further enacted, that the Board of Supervisors (or other county authorities), may cause printed notices, stating the times when running fires are prohibited, and the varions penalties mentioned in this Act, to be posted in each school-house, and at such places as election notices are posted, throughout the county, or in such towns as they may deem proper, and the expenses of this may be made a county charge.

§ 18. All penalties incurred under this Act, shall be prosecuted by the Fire Warden of the district before a justice of the peace, and in the name of the people. The moneys recovered are to be paid into the county treasury, to be applied first to the payment of expenses incurred under this Act in the extinguishment of forest fires ; and if any remain over, for the support of roads and bridges in the towns where the fines were incurred.

§ 19. This Act shall take effect immediately.

I have thus presented the outlines of a plan of legislation, which I think might be modified to meet the wants of every part of the country. It embraces the following principles :—

1. A local option in the county authorities, who would be best able to judge of local wants and circumstances.

2. A recognized authority in directing operations, as in the case of city fires, where the chief of a fire department, or his representatives, may compel assistance in case of fires.

3. A county charge for necessary expenses. This is justified and allowed in the case of property destroyed by a mob, upon the principle that the county owes protection to its citizens, and that having provided an agency in its civil officers, for the prevention of crimes, and the protection of property,—which may be expanded to meet an emergency at any time,—it is bound to exercise this power for prevention and protection, or pay the losses that may happen from failing to do so.

4. Personal responsibility in the use of fire, and penalties for carelessness, whether damages ensue or not.

5. Responsibility for damages resulting from fires, as a matter of common justice, and upon the general principle, that if any person injures the property of another, he shall pay him for it.

6. A pecuniary fine for carelessness and wrong doing, which may, within certain limits be proportioned to the offence, . . or a personal punishment in default of payment.

In studying this subject, we cannot fail to notice, how much of these calamities is avoidable, with due caution ; how much might be saved, by a little timely thought and habitual care ; and how much might be gained, by instilling into the minds of the young, in our families and our schools, those habits of caution and prudence, and regard for the rights of others, that would in future prevent so many of these losses that we now deplore.

The following report was then read by the recording secretary, the writer being absent.

THE MANAGEMENT OF BURNED FORESTS.

By Bernhard E. Fernow, Slatington, Penna.

It is evident that in the management of a burned forest, *i.e.*, the efforts to repair the damage done by fire to the standing growth as well as to the soil, the prospective value of the forest, must depend not only on the requirments of the species, of which the forest is composed, and the system of management, to which the forest has been subject, but also on the intensity of the fire and the degree of injury, which has been suffered by the growth.

We have to study the influence of the fire on the soil and on the standing timber, before we can decide upon the treatment.

When we contemplate the method of the prairie settler or the Kassack of the Russian steppes, burning over his grazing lands with a view of encouraging the sprouting of new grass, and of enriching the soil for a more luxuriant verdure, we might be tempted to consider the burning over of a forest tract, if only kept in bounds so as not to injure the timber, as beneficial after all to the growth of trees. But here we are drawing a mistaken analogy, for whilst the production of grass and herbs, in fact all agricultural vegetation depends mainly on the mineral richness of the soil, in forestry this factor of the growth takes a very different part. The tree lives mainly from the air ; the bulk of its substance is undoubtedly made up from the decomposition of the carbonic gas of the air and of water.

The influence of the soil on the forest growth is almost entirely based on its physical properties, and of these especially its capacity of absorbing and retaining moisture, the main agent of successful tree growth. The yearly fall of leaves and dead branches or twigs, not only returns to the soil the greatest part of any mineral substances, absorbed by the trees, and thus sufficiently renews, if that were necessary, the richness in inorganic elements, but by the decay of this vegetable mould a soil cover is formed, which eminently possesses the desired quality of receiving the atmospheric precipitations and returning the same to the trees as needed ; besides this vegetable mould or humus being a bad conductor of heat, it counteracts the drying effects of the scorching sun, wherever the crown cover of the thinly foliaged species or of the thinly standing trees does not afford sufficient protection.

Now, this cover is first attacked by the devouring flames, and is converted into ashes to a greater or less depth according to the season, when the fire occurs and the consequent relative humidity of the soil. And by its destruction all the inherent favourable physical qualities are destroyed.

Especially where the natural conditions of the under-lying soil are of a poor description, such as the dry sands of the diluvial plains, the destruction of the humus, accumulated through many years, may seriously affect the capacity of the soil for successful forest culture. And when, to crown the disaster, the protecting cover of the trees themselves has fallen a victim to the ravaging element, thus giving access to parching sun and wind, the ingenuity of a forester will indeed be taxed to the utmost, to restore the necessary conditions of forest growth, nay, it may become almost impossible.

Although the fire may not have attacked the standing timber, yet the injurious effect will be visible years hence, when the trees are cut ; one or several annual rings or layers of wood following the years after the catastrophe will note the consequent decline of growth, or to express it in a financial way, a reduction of the yearly dividend.

The vitality of the trees may be impaired by the action of the scorching flames on the cambium, and even if utilized at once, the injured butt logs, the most valuable ones, will often count a considerable deficit in the lumberman's estimate. In hardwood forests, where the reproduction is expected from sprouts, the reproductive power of the stocks is injured in proportion to the degree of heat developed by the fire. In the pineries, where reproduction is expected from the seed, the young seedlings fall the first victims of the merciless foe.

Where the fire kills the original growth or causes the speedy death of the same, the conditions for forest growth are at once changed, and those alternations of species occur, which are a natural consequence of the change of these conditions. The shade-loving and the shade-bearing species find no favourable inducements ; the light-needing, especially the light-seeded ones, which produce seed plentifully and give it to the distributing winds, take the place, excluding by their rank and vigorous growth the existence of their more pretentious and slow-growing brethren.

Unfortunately the latter are the more valuable kinds. Yet we must be thankful that the tribe of birches, poplars, cherries, willows, will be satisfied with the unsatisfactory conditions presented to them by the burned forests ; because their decaying foliage, what cover they afford to the soil, recuperates in time the powers of the same to bear a better crop, and recalls to useful production the lost area.

I may be allowed here to quote Prof. C. C. Sargent's happy description of this process.

"If a forest is destroyed by fire, which kills the trees and undergrowth of shrubs and herbs of the same species, except in the case of some of our least valuable trees, they rarely spring up again. Let us take the case of a white pine forest. If a forest of white pine is destoyed by fire, this tree does not spring up again. The land if only a part of the trees had been cut, would have continued to produce pines indefinitely, is not covered again with any growth of trees for a considerable period. The fireweed makes its appearance. The light seed of this plant is often blown for a long distance, and falling upon the bare ground germinates quickly, and finally covers the burned surface with vegetation. Birds drop the seeds of raspberries and blackberries, which find sufficient nourishment (?) and light for germination. These, as they grow, cover the ground and afford protection to the stones of the little mountain cherry, dropped by birds also, or the light seeds of the gray birch or some of the willows or poplars, which are constantly blowing about, and which germinate anywhere upon unshaded ground, however barren.

"These are generally the first trees, which succeed a white pine forest destroyed by fire; but years often elapse before the ground is covered even with such trees. Nature works slowly, and the wounds made by fire on the earth's covering of trees are only healed under most favourable conditions, through the gradual growth and decay of many generations of plants. The cherries, and the birch and poplars are short lived; and unless burned up, when the same process of recovering commences again, are succeeded by more valuable broad-leaved trees. Squirrels and other animals deposit acorns and nuts in the ground, and the wind brings the seeds of maples, ashes, and the valuable birches. Such seeds find protection among the poplars and willows which had sprung up on the burned land, and as these die, the more valuable trees get a chance to grow and gradually occupy the ground. This new forest of hardwood trees, if protected from fire, will long occupy the ground, and the original pine forest will not appear again until the land long enriched by an annual deposit of leaves has been again stripped of its tree covering and mellowed by years of cultivation. Such land, nearly all over New England, if freed from the plough and the scythe, and guarded from fire and pasturage, grows up again with pine. The different processes, however, by which white pine land, on which the forest has been destroyed by fire, has been again brought into the condition to produce spontaneously another crop of pine, have occupied a long period of time—so long, indeed that it must extend through generations of human life. The forest fire then which destroyed the pine trees growing upon the land, destroyed also, the capacity of the land to produce again, during a period which may be set down at from fifty to one hundred years a similar crop of trees." What now can human ingenuity do to meet these disastrous effects and to recall to profitable use a forest so destroyed, so withdrawn from the production of valuable timber; what is the best management of a burned forest?

Before answering these questions let me recall to you the old adage that an ounce of prevention is better than a pound of cure, and never more so than in this case; where, what it took decades and centuries to produce, may be destroyed in a day through criminal carelessness and inexcusable neglect. What may, and ought to be done by legislation to prevent these dangers, will be discussed by another member of this Congress. Let me only call attention to some advisable means, by which the forester may secure his property, or at least lessen the danger and risk of fire, such as are adopted in other countries.

Whatever may be done in regard to a vigilant firewatch, to careful handling of fires outside and inside of the woodland, the following methods are successfully applied to restrict the spread of eventual fires. In the plain and especially in pineries a forest district is divided into blocks of any desired area, by openings of from one to two rods width. In a well regulated forest management, these blocks serve more than one purpose. Not only do they enable the confinement of running fires in the limits of the block, the openings or fireguards presenting convenient lines of defence, and points d'appui for counterfires, etc., but they also form the basis of an orderly division of a large area, they enable easier areantation by numbering the blocks, they give chance for a closer estimation of the standing timber, they reduce, if opened up in time, the danger of storm-falls, (as the outside trees accustom themselves to the swaying wind and take firmer hold with their roots) and

they facilitate the access to any one point of the forest. In fact it is advisable to arrange these openings so that they may eventually serve as roads. The size of the blocks may depend not only upon the size of the area so to be divided, but upon the thoroughness of the management and especially upon the degree of danger from fires; for the latter reason resinous woods should be cut up into the smallest blocks. In Prussia the blocks comprise generally 100 to 200 acres. The form may, in the plain, be most conveniently an oblong, facilitating the removal of the timber. In the mountains it is generally adapted to the configuration of the soil.

If in this country the conditions of development do not yet call for such orderly management, the time will not be far when, at least in the Eastern States and near wood-using centres, similar attention to detail will be requisite, and the economy of such order will be appreciated.

Where the risk of fire is occasioned by the proximity of railroads, and as long as efficient spark arresters are not invented, or their use not enforced, recourse may be had to the formation of a safety belt along the endangered line. Such a belt consists of a space say sixty to seventy feet wide, along both sides of the railroad, cleared of all timber which, where opportunity offers, may be put to agricultural use. In Prussia very often the track-walkers use the ground for their potato patches, etc. Or if the soil cannot be spared from timber-culture, the growth of a thin foliage, deciduous species like the birch, may be allowed on such a belt, taking care, however, to clear away any casual undergrowth and little rubbish, which, by its inflammability, would breed danger. The ploughing up of a few furrows or a ditch between the belt and timber is a cheap additional precaution.

The practice of burning the rubbish after clearing can be recommended only where no other precaution against the spread of fire will do, or where, as sometimes in pine-woods, the additional danger of destructive insects may be increased by offering a breeding place in the dry litter. Otherwise, as has been said before, *any firing must be considered injurious* to the capacity of the soil, especially on sandy soils with only a thin humus cover may it preclude all possibility of reforestation.

In regard to the management of a burned forest it must not be forgotten that the consideration of this question involves a financial as well as a purely forestral problem. In this country, especially where the desire of realizing all the value for the present without regard to the future is prevalent, the distance and the fastidiousness of the market, the lack of demand for inferior grades and for firewood, may preclude all efforts to exercise any systematic forest management.

Considerations for the financier would be the following :—

The possibility of utilizing the remaining timber at any profit, or at least at the cost of working it.

The value of the loss in accretion by the impaired vitality of the timber.

The loss of soil rent for the time from reforestation to growth to the size of the destroyed forest.

A change of system, for instance, from timber forests to coppice, or the reverse : or from forest to agriculture.

Choice of a more valuable or quicker-growing species instead of a slow grower or a less desirable timber.

Setting aside the financial question, which is of a local character, the treatment depends on the species constituting the forest, and on the system of management adopted. In the coppice when the stems have been not only blackened but partly burned, the only right plan is to clear at once at the proper season. Otherwise decay will set in and the vitality of the stocks will be greatly impaired. Besides, with the impaired vitality of the stocks, the yearly accretion would fall below an average rate of growth, and it would therefore make the continuation of the same growth unprofitable. The same rule may be best applied to young plantations of deciduous trees up to fifteen or twenty years; the new sprouts will, if properly thinned in most cases and with most species, soon replace the cover. It is, however, in the further treatment of these, to be considered that the rate of growth of the coppice—*i.e.*, where the growth is originated from stocks, is different from that of seedlings; and that though the sprouts of most species will show a thriftier

growth in the first year, their height accretion relaxes earlier, and they attain their greatest accretion and their maturity sooner than seedlings. The rotation of such forests therefore must be shortened.

As regards the retaining of such trees or groups of trees as were not injured by the fire, this is a temptation to which we must yield only with caution, as their shade might prove injurious to the surrounding young shoots and impeding their growth.

In larger growths, intended for timber forests, if the injury does not extend to a total destruction or nearly so of the trees, it must be kept in mind that a fire induces earlier maturity; and where a healing from the effects of the fire cannot be expected, the utilization with a view to natural seeding or else clearing, followed by immediate reforestation, should be adopted.

Where the destruction is a total one, no wiser plan than immediate replanting can be recommended. This is especially the only measure with resinous trees, which are almost certain to lose their ground entirely, if after a fire left to themselves in the struggle for existence.

It is not to be forgotten that the dead trees remaining offer the very best opportunity for an increased development of injurious insects. In forests of deciduous trees, where the heat of fires generally is not as intense as in pinewoods, it may be a cheap plan to await a new growth from the stocks, and by carefully nursing the more valuable species, cutting back the less valuable ones, eventually filling up bare spots by planting or seeding shade-enduring species, to recover in time the lost ground for the valuable species.

In this, as in every other problem of forestry, it is impossible to prescribe definite rules that will cover all requirements of particular cases. A thorough elementary knowledge of the conditions of forest growth alone will enable the forester to decide what methods to adopt for the restoration of the lost growth, and to repair the damage inflicted by fires upon the soil and the forest.

Dr. Franklin B. Hough then read the following paper on

ASSOCIATION OF INTERESTS IN FOREST CULTURE.

In the management of landed estates generally, there is perhaps more than in any other kind of investment, the need of direct personal supervision, and that attention to detail which an owner can best bestow. Still, in agricultural affairs, it is sometimes necessary for several owners, having lands adjacent, and needing a common improvement, to seek an organization under the protection of a law, where individual enterprise could not secure the result required, even though it becomes necessary for an unwilling minority to unite with them in sharing the expenses and the benefits.

We find an example of this, in the drainage of swamp lands, the reclaiming of tracts submerged or liable to overflow, and especially in regions that can only be cultivated under irrigation. In these cases, and others that could be cited, there is often a large expense to be incurred, before any benefit is realized. It is sometimes necessary to employ skilled engineers; to acquire right of way across lands that are not benefited, or that may be injured by the work in prospect; and sometimes to obtain the consent of a public authority before the work is begun. For most of these cases provision has been made in the several States, under general laws; and special legislation, in the absence of such laws, has seldom been denied, when the enterprise was reasonable and proper, and the owners of the property were able and willing to incur the expenses.

We cannot but congratulate ourselves, at one advantage in our favour, as compared with most countries upon the continent in Europe: we have no rights of common usage to conciliate. What a man owns is his; and his neighbour has no right to question him in its enjoyment, so long as he affects the rights of no one else, and so long as a public interest is not injured by his occupation. This is of course qualified by the conditions imposed upon all citizens, of yielding the right of eminent domain as it becomes necessary for public use, and of assisting in the maintenance of a common government. But there are other instances in which a common interest requires a common effort, beyond

that which is so naturally and so often manifested; by consultation, voluntary associations for the discussion of special subjects which concern all their members, and other measures tending to promote the general welfare.

In the matter of forest management, we find at times a convenience, amounting sometimes to a necessity, for the association of the interests of adjacent owners, in the profitable management of the property, which at a future time cannot fail to require the protection and regulation of law.

In the planting of groves and of wind-breaks upon farms, there is of course no occasion for public notice, any more than there would be in respect to a common grain-field; but in the matter of adjacent woodlands belonging to many owners—perhaps of large aggregate extent, but difficult of access—sometimes inaccessible without crossing the lands of others, there are points to be considered, that we may have to notice.

We find an instance at hand that will illustrate the subject. About fifty years ago, in Rockland county, New York, there was found a wild broken tract of forest among the highlands, extending into two adjoining towns, belonging to a considerable number of owners, and collectively known as the "Big Woods." It was found that the common interests of these owners, required a union of effort in which a majority might control for the common welfare, and an Act was procured March, 13, 1835, entitled "An Act to Enclose a Tract of Woodland in the County of Rockland."

It was a special Act, and after describing the tract by metes and bounds in detail, it named three of the owners as trustees, until others were elected at an annual meeting to be held by all the owners on an appointed day. These trustees were to cause the whole of the tract to be enclosed, each proprietor being allowed to build a certain portion, according to the share of his interest; or if this was neglected, it was done at his expense. In places where the boundary was along lands not thus enclosed, their owners were of course required to build their share as on common partition lines. A record of proceedings was to be kept, and a report made at the annual election of trustees. No person whatever, whether an owner or not, was allowed to turn any of his domestic animals into this common enclosure, unless upon his own part—which was to be separately fenced at his sole expense—under penalties that might be recovered by the trustees in an action of debt, and for the common benefit. In short these trustees were vested with corporate powers, in so far as concerned the maintenance of the protection of the combined estate. In this instance, it does not appear that any of the parties included, dissented from the arrangement. If there had been, it should afford no reason why the law should not have been passed, at the desire of a controlling majority. There would be no difficulty in arranging a general statute, in any of our States, that would meet all the contingencies likely to arise in cases of this kind; and if such a law provided that each owner should have in person or by proxy, a voice in the elections in proportion to his interest, and if the elections and accounting were annual, there appears to be no reason to suppose that injustice could be done.

In Prussia, a law was passed in 1875, after several years of discussion, which secured very effectually not only protection but management of the common interests of adjacent forest lands of different owners, after a proceeding which I regard as better calculated for guarding the rights of all parties concerned, than anything we have in use in this country, and for this reason I will present it as concisely as possible.

This law provided that where woodlands adjoining could not be worked conveniently, except by a common association, a majority might apply for measures having this object in view; might agree upon articles specifying the object, plan and organization, and submit the same to a district tribunal, of the district where located, with all the information necessary for its full understanding.

A time and place being appointed for a hearing, and all parties having an interest being notified, any one of them may appear and state his reasons for or against the proposed union. Those not attending are presumed to accept the decisions of the members present. If approved, a formal code of regulations is prepared and signed, in which the rights of every member are carefully stipulated, including rights of servitude, and the indemnities to be allowed for their extinction; and when these formalities are concluded, the company is declared fully organized, to continue until dissolved by a similar appointment

and proceeding. As such a tract of woodland might be of very unequal value, as well in respect to soil surface and location, as the condition of the timber that might be growing upon it, the values as well transient as permanent, are carefully appraised, and each owner is credited with what is found due.

There are obvious economies to be realized in the management of large tracts of forest land, quite as great as those from associated capital invested in large commercial or manufacturing purposes. I am well convinced that the problems concerned in this subject will at a future day become a matter of careful study in this country,—when the time shall approach, be it near or more distant, that the present great sources of our timber supply shall have been spent.

Should it be found practicable for capital to monopolize and control our lumber supplies, as it does our railroad system, and in various departments, our manufacturers, our financial institutions and our commerce; we need not doubt but that every advantage in the way of scientific principles and economical methods will be sought, and that the most will be made from the opportunities under control.

The time may not be near, but it is none the less true, that these advantages are worth seeking by every owner of a forest estate; and it is capable of proof that in many sections of the country, and especially in the broken and rocky portions of the Atlantic states that are unfit for agricultural purposes, as well as upon fields exhausted by improvident tillage, there is no form of investment that promises a better return. There is certainly no form of cultivation, that, after the beginning, requires less labour, and none which with proper protection is more sure of a profitable return.

These opportunities are offered in increased degree upon the prairies, with the additions due to a better soil, greater convenience in working, and often with a nearer market for the products, besides all the incidental advantages resulting to agriculture, which their presence would bring.

The Hon. H. G. Joly, of Quebec, read a paper on

THE STUDY OF FORESTRY AS AN IMPORTANT CONTRIBUTOR TO PRACTICAL EDUCATION.

There is a danger, in treating this subject—that of exaggeration—which will damage the best cause.

The fact that we have met here from such widely distant sections of North America —that many of us, leaving our homes and occupations, have travelled hundreds and hundreds of miles to attend this Forestry Congress—is a strong guarantee that every effort made to raise in public estimation the study and practise of Forestry, will meet with your hearty support. But I wish to appeal to your reason rather than to your sympathy, and to satisfy the judgment of the thoughtful men, who are ready and willing to join every earnest effort, if they can once see that its results will be beneficial to mankind.

What is meant by practical education? Training the child, his body, his mind, and his heart for the work of life. It is a general preparation for it. When you begin the education of the child you do not know what his future occupation in life will be. A good education is like a solid foundation built on the rock, ready to receive and support with safety any kind of superstructure that may be erected upon it.

Education is training.—There is mental gymnastic to train the mind, as well as corporal gymnastic to train the body. A man is not often called upon in after life to repeat the performances learnt as a boy at the gymnasium. He may even forget them, for want of practice; but he will preserve through life some of the strength and activity thereby acquired.

The aim of practical education or training ought to be as much as possible to choose

for the training of children such exercises as will be directly applicable and useful in after life ; and I think the study of forestry fulfils these conditions to a great degree.

Timber is in request, more or less, all over the world. The Esquimaux is about the only man who dispenses with it, not from choice, but because he cannot get it. His winter residence is built with blocks of ice, and he braves the angry waves of the North Seas in a leather canoe, ribbed with the bones of whales. Everywhere else you will find wood, sometimes only the palm tree, or even the bamboo, but everywhere in the wildest as in the most civilized countries, you will find wood in daily use.

Where the natural growth of timber is abundant the people will waste it, if they are not brought up with a due consideration of its value. As a Canadian, I can speak with some experience on that point. In such countries people ought to be taught the value of timber; which trees to cut, which to preserve, how to thin their forests with judgment, so as to increase their value, while deriving a good revenue from them.

On the other side, where the timber is scarce, or where there is none, like in the western prairies, people must be taught how to grow it. They must learn what kinds of trees are best adapted to their soil, their climate, and their wants, and how to grow them.

It is wonderful how little the country people in general know about forest trees. Let them begin to learn when they are young. The best mode of instructing a people is to begin by instructing the children. This is the surest way of reaching the people at large.

You will say : " You are speaking of a general system of education ; remember that what you propose will only apply to the country, and not to the cities." By far the great majority of the human race live in the country, and those who are condemned to live in the cities generally look forward, as a happy deliverance and reward for their labours, to the time when they will leave town and live in the country. Take the most devoted townsman and ask him if the forest trees are not the finest ornament of his streets. But let that distinction stand as between country people and city people, if you like. I will now attempt to show that the proposition enunciated in the title of this paper applies to both cases, and that the study of the elements of forestry can be made an important contributor to practical education.

How can you teach a child a better lesson of foresight, observation, patience, care for the smallest details, and perseverance, than in teaching him to plant a tree ? He will soon learn that he can only transplant his tree with hopes of success, in certain seasons ; that, if he does not take it up with care, carry it with care, replant it with care, it will not grow. He will soon find out that, by weeding and cultivating the ground, carefully staking his tree, pruning it judiciously, it will prosper.

Speak of the training of young trees ? Has not that very example of the careful training of a young and tender tree, been taken in all ages, in all countries, as the best example for the education of childhood ?

There are not many schools, even in the cities, where children could not be taught to plant, every year, and attend to at least one tree each. If there is no room on the school grounds, there is room along the streets, the roads, the squares, the uncultivated hills, stony patches, waste ground in the neighbourhood of cities, where trees would always be welcomed. The fact is that in several schools the practice has been already introduced in observation of Arbor Day. It is good work for the body and the mind, and I do not fear to say for the heart, too.

What a lesson you could teach a child when he asks : " How long will it take before that tree I am now planting is big enough to be cut down ? " if you answer : " It may take twenty, thirty, forty years or more ; that is a terrible long time to wait, is it not ? You may die before your tree is big, or go so far away that you will never see it again. But your work will not be lost, my child. If you do not profit by it others will, and you will have done more than many a grown up man has done ; you will have left something useful behind you."

A communication was received from Gen. Hermann Haupt, Manager for the Northern Pacific Railroad Company, inviting the Association to an excursion upon their road. The thanks of the Congress were voted to Gen. Haupt for this courtesy, and Mr. J. Fletcher Williams was requested to ascertain the details of arrangement.

Prof. Wm. R. Lazenby, from the committee appointed the day previous, to report upon Tree Planting, made the following report:

REPORT OF COMMITTEE UPON TREE PLANTING.

Forest Trees exist mainly for use, and no knowledge pertaining to the subject of Forestry is more essential than to know how to raise them. Trees may be planted for at least three distinct and special purposes:

(1.) For Timber.

(2.) For Shelter (an object too often overlooked), or,

(3.) For Ornament.

Your Committee would emphasize the fact, that the variety of trees grown for any of these special purposes, the manner of treating the seed and raising seedlings, the method of transplanting and after cultivation, will depend very greatly upon the conditions of soil and climate. Hence the success or failure of tree planting in one section, will be no criterion for success or failure in another. So variable are the attendant circumstances, that nothing except a very general report upon the raising and management of trees will be given.

PROPAGATION BY SEEDS.

No specific time can be given for securing all kinds of tree seeds. As a rule, they should be gathered soon after they are ripe, placed upon the ground and covered to a greater or less depth with soil; the depth depending largely upon the amount of moisture. All seeds which have a porous covering, like the elm, ash, maple, etc., should be sown in a carefully prepared seedbed, immediately after they are gathered. Seeds which have a firm hard covering, like the locust, retain their vitality for a long time, and may be kept in a cool, dry, equable temperature. Such seeds should be thoroughly soaked before being sown. In many sections of the country, seeds like the walnut, acorn, hickory-nut, etc., can be successfully grown by planting them where the trees are to permanently stand, rendering transplanting unnecessary.

PREPARATION OF SEEDBEDS.

For nearly all hardy deciduous trees, any open ground is suitable, provided the soil be deep, mellow and rich. For evergreens, and a few deciduous trees like the elm, the seedbed must be shaded. In propagating forest trees, it is well to grow several varieties at the same time. Some insects, atmospheric trouble, or ill-understood condition of soil, may cause a failure of one or two varieties, where others live and thrive. If all should do well, when you come to transplant, those that are the most valuable may alone be used.

TRANSPLANTING OF SEEDLING TREES.

As a rule, this operation should be performed after the first season's growth. For some cases, if the season has been unfavourable, the variety a slow-growing sort, and the seedlings are not crowded, it may be better to leave them in the soil till another year.

Trees may be transplanted in the fall or spring; these are points that must be determined by the exercise of judgment. In Forestry, as elsewhere, nothing should be absolutely trusted but your own senses.

HINTS FOR PLANTING AND CULTIVATION.

(1.) Plant thickly in rows, with full purpose to thin and prune as circumstances shall dictate.

(2.) Never plant a tree that has any dead or diseased roots.

(3.) Upon a heavy clay soil, never plant seedlings any deeper than they were in the seedbed. On a deep porous or drift soil, they should be planted several inches deeper.

(4.) Good cultivation is just as essential in a young forestry plantation, as it is in a cornfield.

PRUNING FOREST TREES.

A straight stem is always desirable, and to secure this some pruning is often necessary. Trees that are planted for ornament or for shelter should usually be allowed to branch low. Those grown for timber, should be trimmed up, *i. e.*, all the lower branches should be removed. Care should be taken, however, not to carry pruning so far as to check growth. All suckers should be annually removed from the base of trees.

CHOICE OF VARIETIES.

The varieties most valuable for any given section, will depend upon location, and the demand in the nearest market. Locust, Catalpa, Chestnut, Soft Maple, Box-Elder, Cottonwood, Willow, etc., are varieties which will give the most speedy returns.

White Pine, Black Walnut, Butternut, Ash, Oak, etc., while not yielding so speedy returns, will prove in many sections the most profitable in the end.

Remarks upon the report last presented, were made by Messrs. Burson, Minier, G. W. Wright and Northrop.

Mr. Minier, presented some observations from his experience in the preservation and planting of seeds. He remarked as a general rule, a seed should be placed in the soil to a depth equal to three times its length.

Mr. Northrop strongly deprecated the planting of large trees.

Mr. Geo. H. Wright thought that soft maple seeds should be planted the same day that they were gathered.

Mr. Beadle inquired concerning the planting of black walnuts, and particularly as to the necessity of their being frozen in order to their germination. In the discussion that followed, Messrs. Burson, Beadle, Minier, G. W. Wright and Loring participated; the latter thinking that continuous moisture alone was sufficient.

Mr. J. G. Knapp then read the following paper on the

EFFECTS OF CLIMATE UPON THE FOREST TREES OF FLORIDA.

By the Hon. J. G. Knapp, Simona, Florida.

In the discussion of any product of Florida, the peculiar climatic conditions of the state must be constantly borne in mind.

In most regions latitudinal, isothermal and isohyetosal lines give clues to natural growths; and also to what exotics may reasonably be expected to succeed therein. The temperature and rainfall of regions to be compared as homogeneous, must be as nearly identical as possible. It is not enough, that the mean temperature of all the months in the year be equal; because, such an equality may be reached by very high degrees at one season of the year, and very low ones at another season. The same mean temperature for the year, may be thus obtained as well as if all the seasons had been more equable. So too, the isohyetosals for the year, may be the same in two places, and yet in one region the rainfall may be distributed very evenly throughout all the months, and in the other, all the rains may fall in a very few months. Under both these conditions, there will be the same annual temperature and rainfall; but vegetations will not be the same. The one may have killing frosts, and the other be nearly frostless. The one may have destructive rains and floods at one season of the year, and be parched and rainless at another; the other region may have the same amount of rainfall, but spread over the entire year. The mean is the same in both, but the extremes differ. Some of these differences, which characterize Florida, will crop out as this paper proceeds.

The soil of Florida does not essentially vary from the maritime portions of the other Southern States ; therefore differences of forest growths must be traced to some differing conditions of the climate.

In an excellent paper, read at Montreal last year, "On the Distribution of the more Important Forest Trees in the Gulf Region," Dr. Mohr noticed a deviation of forest tree growth from the latitudinal lines, east and west of the Mississippi river. He instanced the long leaved pine (*Pinus australis*), as having its northern limit at 32° in Texas, while in Alabama it is found two and a-half degrees further north ; and he might have added, that in North Carolina, its northern limit is four degrees further. The over cup oak (*Quercus macrocarpus*), is common in the bottoms as far south as 29° in Texas, yet it is even doubtful if it grows in Mississippi or Alabama. He very properly attributes these differences to the changed climatic conditions of the region west of the Mississippi, and mainly to the chilling influences of the north-western winds sweeping with unmitigated force over the vast expanse of treeless plains west of the forest region ; and to the diminished precipitation of atmospheric moisture. Here is a rule which must not be lost sight of in considering any aspect of Florida—an equable distribution of rainfall.

Homogeneousness of climatic conditions causes homogeneousness of vegetation. So heterogeneousness of climate causes heterogeneousness of growths. It is not enough that there be the same isotherms and the same isohyetosals in the regions compared, but temperature and rainfall must correspond in months and seasons. San Antonia and Brownsville, in Texas, correspond in latitude and isotherms with San Augustin and the Ten Thousand Islands, in Florida, but the temperature and rainfalls vary essentially. In Texas the summers are hot and dry ; in Florida warm and wet. The Texan winters have severe northers, which, even at Brownsville, would kill the orange tree. In Florida the frosts do not kill them as far north as San Augustin. The rains fall most in winter in Texas, and in Florida they occur in all the months, but most in summer. The dry season of Texas, often a drought in summer, is met in Florida, at the same season, by an average of four showers in a week and a rainfall of three or four feet. In this is found the main cause of the difference of forest growths in the two States.

Below the 33rd degree of latitude, the atmosphere may contain the same absolute degree of humidity, or insensible water held in suspension, over Texas, Mississippi, Alabama, Georgia or Louisana and Florida ; yet there may be a great difference in the amount of precipitation in the different localities, owing to a difference in temperatures. The winters of Florida are warmer than in the other States, and the rain and dew are less because the warm atmosphere can retain the moisture. On the other hand the summers are warmer in those States than in Florida, and the latter has wetter summers than the former, which make them suffer from summer droughts. This variation of temperature and rainfall, is one cause of the variation of forest growths. Add to this cause the variation of timber growths already mentioned, which places Texas north of the belt of the long leaved pines, and it is not difficult to suppose most of Florida south of the same belt, and the heterogeneousness of the Florida forest as compared with those of Alabama and Georgia may be accounted for notwithstanding latitudes.

DIVISIONS OF FLORIDA.

In Florida the isotherms and belts of rainfall have such a parallelism east and west, that the most convenient method of considering its forests is by the lines of latitude. The State extends into seven degrees of latitude, and I shall consider it under seven divisions or belts. 1 Northern, 2 North Central, 3 Central, 4 South Central, 5 Southern, 6 Semi-tropical and 7 Tropical.

NORTH FLORIDA.

This belt lying between 30° and 31°, embraces all the northern counties, and extends from the Perdido [Partido?] river to the Atlantic. As far east as the Suwanee river, it is mostly in what Dr. Mohr designates "the great maritime pine belt of the eastern Gulf States ;" the timber trees of which he has so ably described, as to leave

little need of further notice. On the older formations of Gadsden, Leon, Columbia and Jefferson counties, besides the pines on the most silicious portions, are found the more southern forms of hardwood trees and some of truly Florida growth. Mingled with these are seen a few of more northern growth. These last contain the blue ash (*Fraxinus quadrangulata*), red maple (*acer rubrum*), basswood (*Tilia Americana*), mulberry (*morus rubrus*), sassafras (*S. officinale*), sour gums (*Nyssa multiflora* and *uniflora*), sweet gum (*Liquidambar styraciflua*), the magnolia *grandiflora*, *acuminata*, and *glauca*. Among the oaks are the live oak (*Quercus virens*), willow oak (*Q. phellos*), swamp white oak (*Q. lyrata*), swamp oak (*Q. Michauxii*), water oak (*Q. aquatica*), turkey oak (*Q. Catesbaei*) and blue jack (*near tinctoria*); the pignut (*Carya porcina*), and water hickory or bastard pecan, (*C. aquatica.*) Dr. Mohr describes many other trees of great value which are found in this belt. The lands on which the hardwoods grow, are denominated "hummucks," or "hammocks," as distinguished from pinelands, and are esteemed the richest soils of the State. The richness is in part due to the character of the soil, but more to the fact that the forest fires seldom run on them to consume the fallen leaves and grass. But this richness has had the effect to destroy these same valuable forests, in order to make fields for cotton and corn.

Near the Atlantic coast and east of the Suwanee river the land is more level, and much of it is at times submerged, giving rise to the expression "flat woods." On this land the long-leaved pine (*P. australis*), loblolly (*P. tæda*), and swamp or bastard pine (*P. cubensis*) are found. But owing to the fact that these lands are not sufficiently drained to allow the long tap roots of the yellow or long leaved pine to penetrate the subsoil, these trees are small and low, as compared with those of the dryer lands. The swamp pines are also less than those described by Dr. Mohr, further west. Much of the timber, such as it was, near the railroad lines, has been already stripped off, and the land is left a prey to the devastating fires that during the dry seasons annually sweep over it, and destroy any young trees that might otherwise grow.

This belt contains many small swamps, called "Bayheads," filled with small bays, swamp ash (*Fraxinus platycarpus*), and small cypress trees, few of which are of any value as timber. The cabbage palmetto (*sabal palmetto*) is common in those flat swamps, but are generally small and short, from some defect in the soil or climate. On places best drained the pines are largest, and the live oaks and water oaks appear. The last on the lower St. John's and St. Mary, become large trees, of little value as timber and short lived as ornamental trees.

The causes spoken of by Dr. Mohr as diverging the timber belts from the parallels of latitude, operate in this portion of Florida, and cause the eastern portion to show a range of timber trees of warmer character than in the western portion; so much that that portion may be considered south of the great maritime pine belt.

All of north Florida possesses a very decidedly warmer temperature than even the adjoining counties in Georgia, fitting them to excel in early market gardening. East of the Suwanee the orange is largely cultivated. The wet lands of this belt are not unhealthful, because there is little alluvium in the soil, and the fresh water in the swamps and marshes does not become stagnant. All can be completely drained, and when so done, the cultivation of crops adapted to the soil and climatic condition will become profitable.

Before leaving this belt, it should be stated that in Gadsden county, near the town of Chattahoochee, and confined to a small locality, grows the *Torreya taxifolia*, or stinking cedar, the most indestructible wood known: also the Florida yew (*Taxus Floridiana*) grows near the same place. The first is a small tree, but deserves the attention of the arboriculturists in the south. Like the *Sequoia*, it has come to us from æons of the past.

THE NORTH CENTRAL BELT

lies between the 29th and 30th parallels, at the base of the peninsula; and is affected by the winds from both gulf and ocean. A great climatic change takes place here. In the eastern half of the belt the sweet orange trees are seldom severely injured by frosts, though frosts are seen every winter. The cold atmospheric waves prevent the growing

of the lemon, citron, and lime. The oranges in this belt do not contain the same amount of sugar as those grown further south, and the grape fruits and shaddocks are not considered edible. The forest growths, however, wear a decidedly warm aspect. The short-leaved and loblolly pines are seldom met with. The white oaks, magnolias, elms, and gums diminish in size and number; the black walnut (*Juglans nigra*), and some other trees disappear from the forests, and other and more southern trees have taken their places in the forest growth of the belt. The climate is becoming more decidedly Floridian. The cold waves are less frequent and injurious in winter. Sufficient rains fall during the colder months for such agricultural products as can be grown. The months of May and June are the dry portion of the year, though they can scarcely be classed as droughty. The summer rains are more frequent than in the northern belt, and the flat woods more often covered with water. These rains have been known to destroy the yellow pines and turkey oaks, in the water lands. Some of the richest hummocks in the State are found in this belt; but not unfrequently, as in the higher portions of the northern belt, these have been sacrificed to corn and cotton. Some fine tracts of pine lands are found in this belt, but they are being sacrificed to fire and cotton.

THE CENTRAL BELT

lies between the 28th and 29th parallels. Being near the centre of the peninsula, and under the influence of the Gulf and Atlantic winds, a further climatic change has taken place, and the Floridian character is more fully established in this belt. The parallel of 28°, and the isotherm of 72° nearly coincide, only separating on account of the greater altitude and distance from the ocean and gulf in the middle of the peninsula. Cold waves do not reach this belt with destructive force every year; and it may be truly said no one can be prepared to speak of the climate and productions of Florida, who has not made himself thoroughly acquainted with this region in all its part.

On both coasts are found the mangroves, butterwoods, ironwoods, and other trees of decidedly tropical origin. The sweet orange, both in tree and fruit here approach their highest perfection. In this central belt lie the counties of Hernando, Sumter, and Orange; the southern portion of Volusia, and the northern portions of Brevard, Polk, and Hillsboro. The backbone of Florida is still found in the counties Hernando, Sumter, Orange, Polk, and Hillsboro. It is supposed that the highest point in the state is in this belt. Some very rich hummocks lie in it; and there is much first-class high pine land, on which the orange trees thrive well; and, as they are never killed by the cold waves, they promise to be durable and prolific. Oranges and other fruits are more profitable than cotton raising, which is yearly increasing in area; and it is to be hoped that the destruction of the forests for the purpose of cotton growing will not continue. Nearly all the wet lands of this belt may be drained sufficiently to grow sugar cane and rice, and make excellent pastures and meadows. Such improvements may put an end to the firing of the woods and consequent destruction of the forests from that cause.

THE SOUTH CENTRAL BELT

lies between the 27th and 28th parallels. Wherever the land is sufficiently dry in this belt, is the region *par excellence* of the semi-tropical fruits. In it lie the counties of Hillsboro, Polk, Brevard, and Manatee. The backbone of Florida extends across the counties of Hillsboro and Polk. Though there is a large area of flat land on which more or less water lies during the rainy season, all may be drained, and made valuable land for agricultural purposes. Much of this land is too wet during the rainy seasons for a healthful growth of the long-leaved pine; and the fires in the dry seasons have destroyed many trees that might otherwise have grown. The cold is never sufficient in this belt to kill the leaves of the sweet orange, grape fruit, and shaddock trees; and the more tender lemon, lime, and citron are seldom cut by the cold waves. The growth of the citron family is continuous, and they all thrive on soils adapted to their growth. All these fruits can remain on the trees until fully ripe, and they have matured their full supply of grape sugar. Hence the best seedling fruits of the state are found in this belt; and it is confidently believed that a large proportion

of the dry land, from which the wild forests shall have been removed, will be again covered with fruit trees, and thus all the climatic advantages of forests be secured.

The wet lands are more subject to winter frosts than the dry ridges, and therefore should not be selected as sites for winter gardens, or for the growth of the more tender fruit trees. The high grounds of the southern terminus of the backbone of the peninsula tend to bend the thermal lines of winter further south in the centre, than on either shore of this belt.

The climate of this belt is decidedly Floridian in character, and cannot be compared to anything bordering upon the Mediterranean. From the vernal to the autumnal equinox, the winds, seldom more than the most gentle breezes from gulf or ocean, vary vary from the west by the south to the east; not unfrequently from all these directions on the same day. The two months before the summer solstice are the dryest, and the three months following that date are the wettest portion of the year. It would therefore be advisable for gardeners, nurserymen, and orchardists to secure the means of watering their crops in that dry period; while the wet season will admonish them to avoid those lands on which water can accumulate on or near the surface, as to all their crops, except sugar and rice; or to provide the means of draining them at that season.

"Bayheads," abounding in rich muck are frequent; and valuable marls and rich phosphates are abundantly scattered over it. By the use of these the dry grounds impoverished by the fires that have devastated these lands for years, may be restored sufficiently to produce crops of grass and fodder plants for the support of stock, upon which farmers here, as elsewhere, must finally depend for the means to keep up the fertility of their lands, and give nourishment to their fruit trees.

Notwithstanding the large amount of wet lands in this belt, there is a tract containing more than 2,500 square miles, where mosquetoes are no more troublesome than in the farming lands of the older northern states, and biting gnats are unknown. The fact is mentioned, not accounted for.

The forest growth of this belt has undergone a further change. The white oaks have disappeared from the woods; the basswood, elm, magnolias, ashes, sassafras, the short-leaved pines and many others are seen for the last time. Two pines not mentioned by Mohr are found. On the keys and mainland are found the mangroves, the sea grape (*Coscoloba uvifera*); gumbo-limbo (*Bursera gummifera*); several varieties of eugenias or ironwoods, white buttonwood (*Conocarpus erecta*); black buttonwood (*Laguncularia racemosa*); sea bean (*Dolichos puniens*); the sweet and sour saps, and several others of the custard apples (*Anonas*); the prickly ash (*Xanthoxylan pterota*); the hog plum (*Ximenia Americana*); the whitewood (*Sapindus saponaria*); the wild fig (*Ficus aurea*), whose juice forms a kind of India-rubber; the Spanish dagger (*Yucca aloifolia*) frequent the coast, but may be transplanted to the dry lands, and constitute a hedge impervious to man and beast. Single trees will form a body straight as an arrow, twenty feet high, crowned with a spike of a thousand white liliaceous flowers, and its wood assumes the double form of an endogens and exogens, like Dracæna, whose antique form is found in the fossils, clathraria and sternbergia. These are a few of the many trees, shrubs and plants of a truly tropical character, found on both coasts and far into the interior. With this almost tropical climate, and vegetations approaching the tropical, no portion of the state is naturally as free from malarial diseases as this; and its general salubrity and advantages must guarantee a dense population to this belt.

THE SOUTHERN BELT

lies between the 26th and 27th parallels, and is embraced in the counties of Manatee, Monroe, and Dade. Its north line passes just north of Charlotte harbour, through the centre of Lake Okeechobee, and a little north of Jupiter Inlet. Its only harbours are on the west side. The few settlements, generally by cattlemen, are confined to the banks of the Miakka, Peace, and Caloosahatchee rivers, to the western keys and the rocky ridge along the eastern shore. The known forests are confined to about the same limits. The peninsula in the southern central belt has been gradually flattening, and the rainy season covers much of this belt with water, without sufficient drains to discharge it into the

ocean. Wet prairies are the result, on which only water plants can thrive, though at some seasons these are dry, and for many years they have suffered like the balance of the state by the insane practice of the incendiary's torch ; and all the young trees have been killed as fast as they may have attempted to grow. This, together with the water covering the ground in the wettest and hottest season of the year, has most effectually prevented much of this region from making only a small forest growth.

In this belt the influence of a yearly six feet rainfall, and a tropical heat during summer, have caused a complete absence of all truly northern varieties of trees. The live oak, the southern pines, and a hickory near the Pecan, with a very hard shell, are about the only trees of more northern origin found in this region. The cypress is still seen in the swamps ; but, as in the belt next north, it is not the large valuable timber tree of Alabama and Mississippi. The cause of diminished growth is not explained, unless the climate is uncongenial ; and it is only found here because trees better adapted to the climatic conditions have not found their way hither.

Frosts are seldom felt in this belt, and all plants that can endure a minimum temperature of 40° will succeed on all lands suitable to their growth. On both shores are found cocoanut palms, and other trees of decidedly tropical character, and we may safely conclude that many other valuable trees may be introduced successfully from abroad. This belt, almost without exception, is sufficiently elevated to admit of perfect drainage. It is now healthful. What effect drainage may have in that respect remains to be determined. I incline to the opinion that it will not be injurious.

THE SEMI-TROPICAL BELT

embraces all the balance of the peninsula, with the east and west keys. Its harbours on the west are Calvareo Bay and the Ten Thousand Islands, entirely unexplored and unmapped, and Bay Biscayne on the east.

The trees are almost exclusively tropical, including the royal, thinax, and cocoanut palms, the cinnamon tree *(Canella alba)*, the quassias *(Simaruba glauca* and *S. amara)*, satinwood *(Chrysophyllum oliveforme)*, torchwood *(Amyrio sylvatica)*, that will blaze like a candle when fresh cut from the green tree, lignumvitæ *(Guiacum sanctum)*, hornwood *(Condalia ferrea)*, the hardest and heaviest of all Florida woods. Mahogany *(Sweetenia mahogani)*, crabwood *(Schæfferia frutescens)*, manchineel *(Hippomane mancinella)*, poisonous to cut or work even when dried, the joewood *(Jaquinia armillaris)*, the most curiously grained and ornamental of all timber, the Bastic *(Dipholis salcifolia)*, the mastic *(Sideroxylon mastichodendron)*, the lancewood *(Nectandra willdenoviana)*, the wild tamarind *(Lysilonra latisiliqua)*, the tallowberry *(Byrsomena lucida)*, and many others of great commercial value and commendable qualities. From these trees we have plain indications that other valuable trees may be here produced by cultivation.

Except the shores and keys, this belt is unexplored. Most of the Indians left in Florida are hidden in its unknown recesses, where whites have never penetrated. The accepted opinion is that it is uninhabitable by Europeans, or even Africans. No reason is assigned for the opinion. These Indians reach it by land, but are never guides. Neither cattlemen, surveyors, nor naturalists have penetrated into the interior—into a region larger than the States of Connecticut and Rhode Island. What forests may be hidden in its everglades, or what new and old varieties may be found, we know not. Whether it consists of tangled jungles like India and central America, from whose labyrinths men can only extricate themselves by the use of a compass ; or, if it be deep morasses of tall water grasses, and tropical reeds, no one can do more than guess. We only know that most of it may be drained, and converted into extensive sugar grounds and rice fields, with grain-bearing bamboo plantations ; while its drains shall form water ways to the markets of the world, and return to its people such things as they may need. It is healthful now, as far as known, and the copious rains that fall on it, with the sea breezes that always fan across it, will in all probability prevent any unfavourable results from its drainage and cultivation ; seeing that all its water-ways should be lined with balsam bearing trees.

consists of the Southern Keys. These are narrow islands washed on every side by the warm waters of the gulf stream. No winds can reach them that do not pass over those warm waters. They are of coraline rocks, and elevated but a few feet above the level of the ocean. Winds reach them unbroken, and storms dash the salt spray across some of them, and waves roll over others; so much that the firm rooting mangroves cannot obtain a durable foothold, and make a shelter for other plants and hold the sand and wind. On the higher keys are palms and the trees and fruits of the West Indian Islands. The water in the ground is salt, and the inhabitants must always depend upon the clouds for their water to drink. All trees except the palms must be short. The population must find employment in gardening, wrecking, and fishing, and live in fields rather than villages and cities; and being on the very verge of the trade winds, these keys must be of great value on account of their climate as residences, and for their productions, though from their narrowness and rocky soil they may never be covered with forests of large trees.

NUMBER OF TREES IN THE UNITED STATES.

There are said to be four hundred and twenty varieties of trees in the United States, and of these full one-half are found growing on Florida soil. More than fifty varities are confined exclusively to this State, more ornamental woods than in all the other States. The climatic conditions we have thus rapidly sketched, the heteroclitical character of Florida, as compared to the balance of the continents of America, Europe, Africa, and a very considerable portion of Asia, becomes apparent, and the trees peculiar to Florida in a great measure demonstrate this characteristic.

Those who may desire to introduce other varieties of trees, whether for the timber, fruit, or ornament, will, by an understanding of these climatic conditions, have a clue to the locations from which the desired trees are to be derived; as also the kinds that will be likely to succeed in this climate. Selections are not to be made from the extremely dry regions of Mexico or California, from the semi-parched coast of the Mediterranean, or the Cape of Good Hope, in Africa, or from the parched peninsula of Persia in Asia, where irrigation is absolutely required for production. Rains are as abundant, and in the hottest seasons of the year in central America, and in Brazil, along the Congo, Niger and Senegal in Africa; in the islands of Ceylon, Java and Sumatra, as they are in semi-tropical Florida; but most of them have a dryer winter. In those places are many trees of great value, which may find a home in Florida, such are the cocoa *(Theobamba cocoa)* from whose nuts chocolate is manufactured; the cow tree, *(Galactadon utile)* which, when tapped, as we do the maple, yields a thick glutinous milk, without acidity, that is drank and eaten as if it were milk from the cow, and is equally nourishing; the Brazil nut, *(Berthelletia excelsa)* whose nuts are so well known, may be grown near the southern shore of the peninsula. It delights in wet marshy lands. The baobab *(Adansonia digitale)* one of which is the oldest tree known upon the globe, and produces the monkey's bread, which is both food and a remedy in putrid fevers; the bread fruit *(Atrocarpus incisa)* with many of the higher orders of spice-bearing trees may prove equal to any cold that may occur in our two southern belts, if they may find a foothold in our coraline rocks, and the salt spray not be uncongenial to their growth. Experiments should be made with many of these trees to determine their adaptability to Florida. There are other trees, like the date and other pinnated and thorny palms, upon which sufficient experiments have been tried to show that they can be grown as far north as Brooksville, latitude 28° 30′. The cocoa-nut palm will thrive near the coast as high as 27° 30′. Although these palms may require twice as many years as the sweet orange before they will bear fruit, yet, when they shall have reached that stage, they will not be less valuable, and with the other valuable trees, will give all the beneficial results, as would the preservation of the natural forests, in retaining to Florida its healthfulness, and afford the people even better shades, and the soil better protection. Among the many valuable trees native and exotic, that may be profitably extended to the warmest regions of the State, the pecan *(Carya oliveformis)* and the mulberry should not be forgotten. The former

will follow the bitter pecan *(Carya porcina)* to Charlotte Harbour; and the *morus multicaulis* and *morus rubra* will flourish all over the State. The latter is a rapid growing tree of valuable timber, and the fruit of both may be made of mercantile value. The olive, as far as tried, thrives well in all parts of the peninsula.

A REGION FROM WHICH TO CHOOSE.

In casting about for a region nearest assimilated in climatic conditions to our Florida, none seems to approach so nearly in its summer rains, equability of temperature and semi-tropical heat, as does the region found near the foot of the Himalaya ranges in upper British India. Here are found some of the largest and most valuable of timber trees, also trees whose fruits are more valuable than the timber itself. Here is the magnificent teak *(Tectona grandis)* whose timber is preferred by the cabinet-maker to mahogany, and by the ship builder to the live oak. The mango and mangosteen are trees nearly as large as the teak, and their timber is nearly as valuable, while their fruits hold a high rank. The tamarind, and the orange with its congeners are natives of this region. These make large and valuable timber trees, and their fruits are too well known to need description. The orange is known to succeed in nearly all of Florida, and the tamarind is found as far north as the twenty-eighth parallel. Some others have already been introduced, and succeed in the southern belts. Others will do the same. Some will thrive on the drained morasses and everglades; and others will cover the dry lands, from which the pines shall have been removed, with more valuable timber and fruit trees and shades, and fill the atmosphere with equally balsamic odours. The tall, straight bamboos, whose seeds equal rye for food of man and domestic animals, can take the place of the tall worthless saw grass and aquatic plants of the morasses, and give their annual yield of seeds and reeds for ages without cultivation. These gigantic straws are brought to our ports by the ship load, and are familiar to every fisherman and boy. Florida might and should supply the United States. The peninsulas of Siam and Cochin China, even China and Japan must be searched for treasures with which to fill our Florida.

ONLY ONE FLORIDA.

The whole earth has but one Florida, and the United States own that. There is only the Florida peninsula in all this world, washed on the west, the south and the east by that greatest of all rivers, "the great river in the ocean," the warmest water of that ocean; but one region in America, if in all the earth, over which devestating cyclones and tornadoes do not pass; but one semi-tropical spot over which siroccoes do not blow and parch; but one region daily fanned by ocean breezes, and whose atmosphere is the breath of flowers and balsamic odours—that region is our Florida.

The general Government may therefore well afford to give a few dollars to the exploration, to the study of the capabilities of Florida; and to place on its soil such trees and plants of value as are adapted to its climatic condition. Florida has in its climate, and may have in its productions, such treasures as none of its sisters can possess—treasures that should be most carefully fostered. Good statesmanship requires the most careful yet liberal legislation on the part of Congress and the State to protect and improve this best inheritance bequeathed by the FATHER to man, till Florida, from an unknown and much slandered region, least of states in estimated value, shall be ranked among the first of states, not only in her rich productions, but in being the home of a healthful and happy people.

Professor DANIELS, of Saint Paul, read a paper on

HOW TO ENLIST THE SCHOOLS IN AID OF FORESTRY.

He spoke of the prevailing ignorance upon the subject of forestry. In creating an interest in the matter, he would first ask the co-operation of the school-teachers, but this also implied an interest on the part of school boards and the State. The first step would

be to summon all the teachers to enlist themselves so far as to know trees by sight, so as to be able to call them by their proper names; for the teachers as a rule were not better informed in these matters than the general public. The essayist went back to the olden time, when country life was more prominent than city life, and when the children, living as they did in the midst of forests, were acquainted not only with the varieties and uses of wood, but of all plant and animal life. The conditions were now changed, and our cities were swarming with people who knew nothing at all about these things. How was such knowledge to be imparted? It must be done through the public schools. Every teacher should be able to teach at least the names of the trees passed by the pupils on their way to school, in the public parks and about their homes. To these should be added the fruit trees. The essayist believed it would be proper for the Legislature to require boards of education to require of the teachers sufficient knowledge to teach these things. In time, when the pupils become more advanced, they should be taught concerning the germination of seeds and the setting of trees. The essayist also suggested the plan of having the pupils cultivate little patches of trees from the seed. If it was urged that the schools were already overcrowded with studies, he would propose that some of the ornamental studies be thrown out and forestry substituted.

It was announced that the excursion upon the Northern Pacific Railroad would start from the Union Depot at 8.30 A.M. on the day following, and that the tickets would be issued to Mandan, Dakota, and return.

A donation of cut flowers from Messrs. Underwood and Emery, of Lake City, to each member of the Congress was then announced, and upon motion of Mr. JOLY, a vote of thanks was returned.

The President having an engagement that would prevent further attendance, made brief remarks upon retiring, and the Congress adjourned until 7.30 P.M.

Evening Session, August 9.

The hour for meeting having arrived Mr. H. G. JOLY, First Vice-President assumed the chair.

Professor ADOLPH LEUÉ, of Cincinnati, Ohio, read a paper entitled

FORESTRAL EXHIBITIONS IN CONNECTION WITH FORESTRY CONVENTIONS.

Professor Leue commenced by saying that forestry conventions in this country have a double purpose—mutual instruction on the one hand and the arousing of a popular interest in the cause of forestry on the other. Nothing should be left undone that may tend to make a forestry convention both instructive and attractive. Instructive to those who earnestly seek information in matters pertaining to forestry, and attractive especially to those who have heretofore persistently remained in that peculiar state of apathy towards our forests, which so advantageously distinguishes the people of this country from those of Europe. The question, How can these be reached, was a problem which at all times had engaged the attention of friends of forestry, and which had never been solved satisfactorily. Forestry, in treating of trees as individuals, of trees in their relation to one another, to the soil, to man, in fact, to all nature, was an extremely interesting study, of which only those who had given it special attention had any idea. In order to reach the indifferent, and create an interest in this study among the people, we must take the forest to them, applying as it were, the advice of Malcolm, when he says:

> "Let every soldier hew him down a bough,
> And bear't before him."

Not only boughs, but anything of the forest, that may be instructive, beautiful or even odd, should be brought. Such a collection which the friends of the forest might easily bring together, will, if properly arranged for exhibition, attract the attention of the people, excite their curiosity and induce them to come and see. Seeing will beget a desire to learn, questions will be asked and discourses listened to, in short an interest will be created and the object is attained. Such an exhibition at each of our annual conventions can not be valued too highly as a means of education. It will stimulate researches, impress upon the mind certain truths, remove doubts, correct errors, become the testing stone of our forestal knowledge.

Professor B. G. Northrop, of Connecticut, addressed the Congress at some length upon

THE NEED OF A DEPARTMENT OF FORESTRY IN COLLEGES.

Professor Northrop stated that he had agitated tree planting in Massachusetts and Connecticut, and that now there was not a homestead in Connecticut that had not been beautified by tree planting during the past fifteen years. What was most needed was to popularize and diffuse the sentiment of trees. Men were more readily reached by sentiment than in any other way. The place to start is at the beginning, and that important fact seemed to have been neglected. There was a school of forestry in Ames, Iowa. There was an arboretum connected with Harvard, but aside from this few steps had been taken to encourage the education of the youth in forestry. In Europe it was one of the rudiments of an early education, and a person destroying a tree or shrub in France or Switzerland would be looked upon as a miscreant just as much as one who would poison the public drinking fountain. What was most needed was to instruct the youth of America in the sentiment of trees and then there would be no need for special legislation to protect the beautifiers of our homes, and we would not be troubled by the starting of forest fires. The value of trees for the reclamation of waste land was not understood, but has been found to be very effective even in Europe. On the shores of the Bay of Biscay terrible storms of sand were continually blowing, and trees were ultimately planted. They protected the habitations on the coast, and where these terrible storms prevailed with such disastrous effects there now stood a beautiful forest over 100 miles long. Thirty years ago Daniel Webster influenced tree planting on Cape Cod, then a barren waste, and to-day there were hundreds of acres under forests. This tree planting had become a matter of vital importance even in China, and recently several trees were planted as an experiment to reclaim waste land near the city of Tine-Tsin, on the property of Wing Ho Tong, president of the Chinese Merchant Steamship Navigation Company. The tree that he was experimenting with was the European larch.

This led to a discussion upon certain points suggested, in which Mr. Thane, Professor Budd and others participated.

The Growth of Various Trees.

Mr. George W. Minier, of Illinois, gave the result of some measurements he had made of forest trees in that State, measuring the circumference at two feet from the ground, as follows :—

Balsam fir, twenty-two years setting, twenty-four inches in circumference ; Norway spruce, thirty years setting, thirty-one inches ; white elm, thirty years, from seed, seventy-two inches ; white ash, eleven years, from seed, twenty inches ; hard maple, twenty-one years setting, thirty-three inches ; tulip, twenty-three years setting, fifty-two inches ; Scotch pine, twenty-one years setting, forty-six inches ; hemlock, eighteen years setting, twenty-two inches ; European larch, twenty-one years setting, thirty-eight inches ; white pine, thirty years setting, sixty-three inches ; Austrian pine, thirty years setting,

forty-three inches; red cedar, thirty years setting, thirty-seven inches; white cedar, thirty-one years setting, thirty-seven inches; soft maple, thirty-one years, from seed, thirty-three inches; black walnut, thirty-two years, from seed, twenty-eight inches; butternut, thirty-two years, dead, thirty-two inches; butternut, thirty-two years, living, twenty-nine inches; white willow, eighteen years from cutting, sixty inches; chestnut, five years from seed, twelve inches; soft maple, thirty-one years setting, sixty inches; red elm, eight years from seed, twenty-four inches.

Mr. Minier stated that the trees were not selected for their size, but the object in the measurement was to take the trees as they averaged in the State.

ARE THE CONCENTRIC RINGS VISIBLE IN THE WOOD A CORRECT INDICATION OF THE AGE OF THE TREES?

Ex-Governor Furnas, of Nebraska, stated that the concentric rings of trees is no criterion of the age of the tree. As a rule Mr. Furnas said the number of rings were in excess of the age of the tree, but he had found one specimen, the age of which was absolutely known, which bore less rings than the age of the tree. He had another specimen which contained two rings for every years' growth.

Prof. Budd, of Iowa, invited attention to a specimen of white poplar, grown on the Iowa Agricultural College farm. It was a close grained timber, does not warp or shrink, and thought it would be a good substitute for the white pine. The specimen showed more than thirty rings, while its actual age was not more than fifteen years. In answer to a question, Prof. Budd said his experience in propagating this poplar from twig cuttings had not been very encouraging. Root cuttings, however, were of quick and strong growth, and twig cuttings put out in the fall generally did well.

Mr. Foster, of Iowa, said he had found in trees he had raised and cut—the catalpa—the rings corresponded with the age of the tree. He noticed, however, that there was a great difference in the width separating the rings, but he was not prepared to say that the rings were unerring indications of the age of the tree. Mr. Foster also stated that he had grown a white pine, not yet thirty years old, which was twenty-seven inches in diameter, which convinced him that that timber could be successfully grown.

Professor Budd said that he had noticed that in dry seasons trees would produce two rings.

Mr. Minier, of Illinois, said he had cut this spring two pine trees he knew to be thirty years of age, in which the rings corresponded with the age, and in his opinion if the gentlemen would look a little further they would find that the timber in which the rings did not agree with the age, they would find it was in cultivated timber. Nature never produced a double flower. Cultivation did that. So, in his opinion, was the ring question, cultivation did the business. As to a substitute for white pine, he thought the reproduction of that wood itself was the cheapest and the best.

Professor C. E. Bessey, of Ames, Iowa, took the position if two rings were produced in one season, there must have been two separate and distinct periods of growth that season, and he asked that each member of the Congress resolve himself into a committee of one to study the subject in readiness for the next meeting.

Professor Wm. Saunders, of London, Ontario, read a paper on the

INSECTS INJURIOUS TO THE WHITE PINE.

This paper is embodied in the report of the Entomological Society of Ontario for the year 1883.

Mr. Elizur Wright, of Boston, Mass., read a paper on

THE HYGIENIC VALUE OF FORESTS.

In comparative computations this is perhaps the least of the values attributed to the woodlands, while possibly, it is the greatest. Health is of the greatest interest to every organized being. The necessary condition of health to all that breathe is, that the atmosphere shall be reasonably pure. It must consist simply of oxygen gas diluted with about four times its volume of nitrogen. Any other gas vitiates it, and, especially if the air should contain as much as one per cent of carbonic acid gas, it becomes intolerably unwholesome. Geology teaches us that previous to the formation of the coal beds the atmosphere was so mixed with this deleteorous gas, that such breathing animals as men could not have existed. It was necessary to deoxodize the carbon that existed in that gas, before the higher forms of animal life could exist. And this was done by that vegetation which extracted carbon from the air, and left it in the form of coal.

But no sooner was the air by the paleozoic forests made fit for breathing animals, than these, in the act of breathing, poured more carbonic acid gas into the air, so that the trees or some other powerful deoxodizer must still keep at work purifying the air, or the breathing animals would be stifled; for be it remembered that carbonic acid though it mixes freely with common air, is so much heavier that it is always found in the largest proportion near the surface.

Well, however it may have come about, what exists to-day is, that animals and vegetables are dependent upon each other. The warm-blooded animal is constantly pouring out of his blood, through his lungs, waste carbon, in the shape of carbonic acid gas, and the tree is constantly absorbing that carbon through its leaves and releasing the oxygen. We must not argue from the vastness of the atmosphere that the animals can get along without the trees. Where is any other deoxodizer that works on a sufficiently large scale? Observe that men and domestic animals not only multiply by millions on the face of the earth, but they are disembowling the earth of its coal and burning it by hundreds of millions of tons a year, which means that they are doing much to put the atmosphere into that condition in which only saurian monsters could live. The tall chimneys carry much of the carbonic acid far above our heads, and the kind winds waft it away to the mountain sides, where it feeds the hungry trees. The great Hebrew legislator plainly recognized the hygienic value of trees, where in his Deuteronomy he wrote:

"When thou shalt besiege a city a long time, in making war against it to take it, thou shalt not destroy the trees thereof by forcing an axe against them: for thou mayest eat of them, and thou shalt not cut them down (for the tree of the field is man's life) to employ them in the siege." Deut. xx. 19.

The true doctrine, including the mode of operation, of the interdependence of men and trees, is quite a modern one. Its real discoverer died only six days before the present speaker was born. He was a particular friend of our Benjamin Franklin. Nearly nine years ago, at the unveiling of the statue of Joseph Priestley, at Birmingham, Prof. Huxley used these memorable words:

"He laid the foundation of gas analysis, he discovered the complementary actions of animal and vegetable life upon the constituents of the atmosphere, and, finally, he crowned his work this day one hundred years ago, by the discovery of that pure 'dephlogisticated air' to which the French chemists subsequently gave the name of oxygen."

For human welfare, was there ever a more valuable discovery in the annals of time?

Yet Priestley was persecuted for his humanity and really driven from his own country to ours. His country honours itself with his statue. Let ours honour itself with the glorious forests of the future, whose cause he pleads.

All vegetables absorb more or less carbon from the atmosphere, but plainly, trees the most, for wood consists mostly of that substance. A white pine will grow on a slightly covered rock, when the soil accessible by its roots could not possibly contain enough carbon to make a cubic foot of wood till its grand trunk contains 500 feet or more. That trees do not get their carbon from the soil or the water therein, the negative evidence is partly complete. That they get it from the carbonic acid floating in the atmosphere, I will adduce authority from the highest scientific minds of the age.

Prof. Balfour, of Edinburgh, after citing and considering all the various opinions and theories of naturalists on the subject, says :—

"From all that has been stated, it would appear that an absorption of carbonic acid by the leaves of plants and an elimination of oxygen takes place during daylight, and that this process ceases in a great measure during the night. The exhalation of carbonic acid by healthy leaves is still doubtful, and the appearance of this acid gas may in many of the experiments be traced to an abnormal condition of the leaves. The great function of the leaves thus seems to be deoxydization, by means of which they are instrumental in keeping up the purity of the atmosphere. This function of plants is antagonistic in its results to animal respiration ; for while the latter takes oxygen from the atmosphere, and replaces it by carbonic acid, the former removes carbonic acid, fixes carbon, and gives out oxygen. The processes of respiration and combustion are pouring into the atmosphere a large quantity of carbonic acid gas, while the active leaves of plants are constantly removing it, and, under the action of light, substituting oxygen. While plants thus get carbonaceous food, the air is by them kept in a state fitted for animal life."

Prof. Ferdinand Cohn, of Breslau, says :—

"The leaves are cell-villages which perform their daily tasks in the air and in the light. Their principal business is to obtain coal, which is the chief constituent of the vegetable body. Our atmosphere is an enormous coal mine, many miles in thickness, that cannot be exhausted in thousands of thousands of years. The coal, indeed, is not found pure in the air, any more than the metal in the ore, but is in combination with oxygen as a transparent gas, carbonic acid, and a peculiar art is required to separate it.

"In the mining districts smelting houses are erected beside the pits, where the noble metal is extracted from the impure ores. The green cells of the leaves combine the art of the miner with that of the smelter, and have the power of extracting the pure carbon from the atmosphere. In order to perform this work they must be shone upon by the sun, for the sunlight alone can excite in them the marvellous faculty. Having extracted the carbon they combine it with water and with the mineral substances that have been drawn from the soil, and prepare from them the living matters out of which the plant itself builds up its cells, and which, taken up into the body of an animal, are transformed by it into flesh and blood."

Hence, I think we may safely concluded that only decaying or unhealthy vegetables ever give out carbonic acid by day or night, and that forests do nothing to speak of in regard to the atmosphere, but to absorb the impurities which animals and their arts are constantly pouring into it.

It follows from this demonstrated fact that keeping up a fit proportion of forest to arable land, is the prime condition of human health. If the trees go, men must decay. Whoever works for the forests works for the happiness and permanence of our civilization. A tree may be an obstruction, but it is never useless. Now is the time to work if we are to be blessed and not cursed by the people of the twentieth and twenty-first centuries. The nation that neglects its forests is surely destined to ruin.

A paper by Dr. A. Eby, of Sebringville, Ontario, was presented by the recording Secretary, entitled :—

HOW SHOULD WE MANAGE OUR NATURAL FORESTS.

By Dr. Eby, Sebringville, Ontario, Canada.

As our natural forests will doubtless be used as the bases of the future forests, it becomes us to consider well how we should manage them in order to achieve the best results. In other words, how can we change our neglected, natural woods into forests cultivated on scientific principles. Many people imagine that nature left to herself will produce her best results ; but experience teaches us that though she may produce splendid specimens, her best results are only yielded when subjected to cultivation and managed according to scientific principles. Profuse and exuberant as nature may be, no one would think of comparing her products with the fruits of our gardens or our orchards. Who does not know the immense superiority of the cultivated strawberry over the wild fruit ; yet it is well known that this result has been attained by the cultivation of the wild plant. In a state of nature the potato produces tubers little larger than walnuts, but by continued cultivation our splendid varieties have been produced. Who does not know the difference between an apple tree left in a state of nature and one subjected to cultivation. In the same way a far larger amount of wood and much more valuable timber can be produced from a given acreage, in a given time, in a forest subjected to cultivation by a scientific forester, than will be produced in the time from an equal area, in a forest left to itself.

If we examine a natural forest, we find it consists to a large extent of trees that have reached a state of maturity. Giants, hoary with age, occupy a large extent of ground, extending their roots and their branches widely in every direction. Some of them have doubtless stood for centuries, and have long since ceased to grow ; and though still showing signs of life and health, are really slowly decaying and will finally die. Their wood, though still firm and sound, shows a looseness of texture not at all found in growing wood. Other trees, not quite so large or so old, are still slowly growing, though their annual increase may not be perceptible. Others again are hardly able to find a place to spread their leaves to the air and the light. These are still young and vigorous, and in the best years of their growth. But as they are, to a large extent over-shadowed by older and larger trees they make but little annual growth. As sunlight is essential to the growth and development of wood cells, small trees that are over-shadowed by those of greater age, grow very little until they are able to expose their leaves to the sunlight.

There are comparatively very few small trees, or what are popularly called saplings. Though the old trees bear seeds abundantly, large numbers of which annually sprout, very few manage to find their way to the light. The dense shade of the older trees soon kills them off. Only here and there one finds sufficient light to grow upward, to where it can spread its head to the sun. As it is very difficult for young trees to get sufficient light for their development, comparatively very few reach a state of maturity. They mostly die of starvation. Though in the midst of an abundance of plant food, for want of some light and heat to change the chemical composition of that food, and thus enable the plant to use it for the growth and development of its cells, the plant sooner or later dies from want of sufficient nourishment.

As the decay and death of mature trees is very slow, requiring ages for their removal, it requires very few young trees to keep a natural forest intact. As the removals are so slow, but few renewals are required. Very few natural forests contain sufficient young trees to make a dense or close growth if the old trees were all removed. I have seen forests a few years after a full seed year, thickly covered with seedlings which would have rapidly grown up if the overshadowing trees had been removed. But left to a state of nature those seedlings die in a few years, as the amount of light that reaches them is not sufficient to effect the chemical changes in their sap to adapt it to their growth. They die because they cannot get the light necessary to change the food that surrounds them, so as to adapt it for their digestion. An abundance of light is essential to plant growth. As the

overtopping trees that occupy nearly all the upper surface of the forest are mostly full grown, their annual increase in size is very small. At the same time the overshadowed smaller and younger trees are stunted in their growth from want of sufficient light. It will thus be seen that the aggregate growth each year of a natural forest must be much less than would be the case if the trees were all of the same age and still sufficiently young for vigorous growth. At what age our native trees cease to grow and the period of their greatest growth are subjects for future observations. Those points can only be decided after those trees have been extensively subjected to forest culture. The observation of their growth in isolated situations, and even in gardens and parks will be of comparatively little value to the forester. Trees grown in isolated situations have the advantage of a greater amount of light and air than those grown in a close forest. At the same time they are more exposed to droughts and storms than the latter.

The first point for the forester to consider in taking charge of a natural forest is how shall he restore it to a state of vigour, so as to attain a maximum increase of bulk each year. This can in a measure be done by removing all the mature trees and leaving only those that are still young and vigorous. It can be done still better by removing all trees more than three or four inches in diameter, and even those of that size if they have been injured by the falling trees, or if they have been much stunted in their growth by overshadowing trees. Care should, however, be taken before the removal of trees to have the ground thoroughly seeded. If it is possible to await a year when the trees bear a full crop of seeds it should be done; but if such cannot be done, or it is desirable to change the variety of the trees, seed or trees must elsewhere be obtained and planted in the vacant spaces between the saplings that have been left standing. A good many healthy sprouts can be obtained from the stumps if care is taken not to injure them in the cutting and the removal of the old wood. If it is intended to utilize the sprouts from the stumps in the growth of new trees, they should be cut as closely as possible to the ground. I need scarcely say that in a forest to be renewed great care must be taken against fire, which not only destroys the life of the stumps, and thus prevents their sprouting, but it destroys the seeds. Where it is necessary to destroy the brush and other rubbish, it should be removed to some vacant lot, where the fire can do no harm.

If the area to be managed is small it may be as well to make the changes as fast as a profitable market can be found for the wood, unless it is intended to treat it under the copse system, when it must be changed in accordance to the system of rotation to be adopted. If the area to be managed comprises several hundred or more acres, it should be divided into such lots as it may be possible to replant each year with the help and resources at the command of the forester; due regard always being taken of the wants of the wood market. If the future forest is to be allowed to grow up to the natural height of the trees, it will be well to divide the forest to be managed into lots corresponding to the number of years that the trees are expected to grow. One of these lots should be renewed each year. Thus a regular system of rotation will at once be established, giving not only a certain area of wood to be felled each year, but the replanting of the same area. Concurrently with the renewal of the annual lots, the large over-mature trees should be removed from the rest of the natural forest, as fast as it is possible to find a profitable market for the wood.

If the existing trees are of such kinds as are valued for their timber, they should by all means be preserved, by obtaining a new growth from the seed or from sprouts. But if they are of inferior value or quality, it will be advisable to replace them, at least partially, by more valuable varieties. For example, it would be advisable to change a beech forest into one in which oak or some other more valuable wood predominates. Consideration should always be taken of the future wants of the district in which the forest is situated. If it be near a manufacturing centre, such woods as are in especial request by the manufacturers should be grown, if the soil and climate be at all favourable to their growth. This fact cannot always be known from the fact that the particular trees wanted grow in the neighbourhood or in the same latitude in other places. Some trees bear exposure to a moist or a salty atmosphere much better than others. Some, again, will flourish on a southern exposure, while others require the northern declivity of a mountain. If the district to be managed is far from a railway or other means of cheap

transportation, while the inhabitants of the surrounding country follow agricultural pursuits, the chances will be that fuel and building timber will be in demand by the time the trees will grow up. It will, therefore, in such cases, be well to plant trees valuable for fuel, with a lesser amount of such trees as will be valuable for building purposes. As building material will always be in demand, no one will go wrong by planting such trees, as pine, spruce, laurel, oak, elm, etc. ; which are most highly valued for building purposes.

My remarks have hitherto been directed especially to deciduous trees. In pine or spruce forests a somewhat different course should be pursued. No trees less than at least sixteen inches in diameter should be allowed to be removed. Trees smaller in size than that mentioned are still in the best years of their growth, and should be permitted to grow on for future use. At the same time steps should be taken to have the vacant spaces well seeded. Care should also be observed that the ground is properly cleaned for the seed. If it is covered with grass or moss such must be removed before the seed begins to fall. Care should also be taken to have the tops and other refuse removed to some vacant space and burnt to prevent their becoming a source of danger by fire. In districts where fuel is scarce, it may be well to allow poor people to remove the stumps for the sake of the wood. They will thus not become a source of danger from fire when they become rotten. When it is not possible to get the stumps removed, care should be taken to have them cut as close to the ground as possible, so as to be out of the way of future operations.

If the trees are cut before the cones have had time to shed their seed, they should be carefully collected from the prostrate trees and placed on cloths or a tight floor in a dry, warm but airy room so that the cones will open, when the seeds will fall out if the cones be well beaten. The seeds so collected should be carefully sown over the vacant spaces in the forest. In Norway a few of the larger trees are left standing to seed the ground, but as the seeds do not fall very far from the parent stem, the young plants will come up very thickly near them, while the ground will be but sparsely, if at all, covered at some distance from the parent trees. Great care should be taken to have our great pine forests thoroughly reseeded after being cut over. This is a matter of so great importance to the future welfare of our continent that it should by no means be left to the chance of a natural seeding. Where the pine lands are still the property of the government, they should be placed in the charge of an efficient staff of thoroughly qualified foresters, who should make it one of their duties to have the annual cuttings thoroughly reseeded so as to have them reforested as soon as possible. Where the pine forests have become private property, their reforestation becomes a question of greater difficulty. But as those lands are mostly of inferior quality or worthless for agricultural purposes and offer few inducements for settlers, it might be good policy for the state or provincial governments to acquire the title to them for the purpose of reforesting them. As forests they would again in a few generations, become sources of wealth to the people and of revenue to their owners, the government. Those lands if left in private hands will, from the poverty of the soil, in a few generations become a barren desert, totally worthless to their owner and a loss to the national wealth. I do not wish to be understood as saying that all pine lands are worthless for agricultural purposes, but it can be said of most of them. Many pine lands at first show a great richness of soil, but will gradually become worthless for farming purposes. The vegetable mould that was formed by the decay during many centuries of the annual fall of leaves, soon becomes exhausted where the subsoil itself is of a poor quality. Once exhausted, such lands bring the husbandman but a very poor return for the labour he is compelled to devote to them. Planted with pine they would produce a rich harvest and would be a source of wealth to the country, but for other crops they are almost worthless.

It will be observed that I have advised the renewal of our natural forests. In my opinion they have reached their maximum growth, and the best thing to be done with them is to make them the basis of future operations. To continue them in thsir present condition is merely storing up the timber for future use in the same way as we store up grain in a granary. It does not gain in bulk, it merely keeps its own. What it gains in bulk by the growth of the young trees it loses in quality by the decay of the old trees. Our natural forests have reached a stage of maturity and the animal growth merely com-

pensates the continual decay. What is required is the decrease of the annual decay and the increase of the annual growth, so as to obtain a net increase of bulk. Just in proportion as the increase of bulk exceeds the annual decay, will the forest become profitable. The cost of the land and the expense of planting may fairly be represented as an investment of capital. The annual increase of bulk should be regarded as the interest on the investment; and just in proportion to the annual growth will be the profit on the investment of capital. It would not be advisable completely to remove our natural forests at once. Though it might be desirable to renew them as quickly as possible, it would be bad economy to cut them down faster than a profitable market can be found for the wood. At the same time the wood should not be placed so abundrntly on the market as to encourage waste. It is to be feared that such is but too often the case. The owners of our woodlands seem to be but too anxious to get rid of their wood. even if they overstock the market, as is very often the case. While we plant trees in order to create a supply for future generations, we should not forget to economize with the store nature has so abundantly provided for our use and make it last until the growth of our own planting can be utilized. Our people should learn so to economize with their wood that the consumption can be brought within the production, that is as much wood should each year be grown as is required for consumption.

We have still a large amount of forest land on this continent and a great deal of waste land that should be reforested. But it cannot be denied that our forests are disappearing so fast as justly to afford thoughtful men cause for serious apprehension for the future welfare of our countries. In many of the older settlements wood is becoming so valuable that the people are carefully husbanding what is left to them, but little effort is however made in reforesting even waste and otherwise worthless lands. What is wanted is a thorough education of our people on the importance of always having a certain proportion of our lands covered by forests. So long as the Forestry Congress is not well supported by the public sentiment of our people, our forests will continue to disappear and no serious efforts at reforesting will be made until public opinion will compel our governments to take the matter in hand. Far however be it from me to say that our present labours are in vain. On the contrary, they are of the highest importance in educating our people and creating that very public sentiment we are now wanting in order to attain practical results from our labours.

When a forest is to be preserved, steps should be taken to make it accessible at all seasons of the year. In other words, roads should be laid out and graded to all parts of the forest, so that if it becomes necessary to remove any fallen trees or thinnings from the forest, it can be done without injury to the growing trees. A waggon driven over the roots of trees will injure them more or less, and will proportionally retard the growth of the trees injured. The question of forest roads may be a question of small importance in woods containing from ten to fifteen acres; but is a matter of great importance when we have to deal with large tracts. It is also of importance where the forest is divided into lots for successive cutting as in copse culture. In such cases, unless the lots are very small, it would be well to have a road around each lot.

Care should also be taken to have the forest cleared of fallen trees, and decaying logs and stumps, as these are a constant source of danger from fire. The forester should always carefully guard his charge against fire. A fire of a few hours duration may destroy the growth of a life time. The forester should also carefully protect all insect eating birds.

Prof. B. G. Northrop, offered a resolution recommending the appointment of an Arbor Day especially for the schools, in the several States and Cañada. which was adopted.

Mr. Stewart Thane, then moved the following resolutions, which being seconded by Prof. Leué, and discussed by various members, were adopted, viz:

"*Resolved*, That it be an instruction to the Executive Committee of the American Forestry Congress, to call a meeting of enrolled members at the opening of next session, *prior to any general meeting*, to receive reports and communications, and to arrange the order of business.'

"*Resolved*, That in the opinion of this Congress, it is advisable that some member of the Executive Committee, or some member or members deputed by them, shall proceed to the next place of meeting ten days prior to such meeting, to see that all necessary preparations be made for the reception of the Congress."

Votes of thanks were then passed—

To the Governor of Minnesota for his kindness in granting the use of the Capitol for the meeting of the Congress, and for personal attention;

To the Mayor of Saint Paul, and to the members of the Local Committee for courtesies and attention to the affairs of the meeting;

Mr. J. Fletcher Williams, in an especial manner for his constant and efficient services prior to and during the session;

To the Burlington Cedar Rapids and Northern R. R. Co.; the Grand Trunk Railway Co. of Canada, the Chicago, Minneapolis and Omaha R. R. Co., the Saint Paul and Milwaukee R. R. Co., the Chicago and Alton R. R. Co., and the Michigan Central R. R. Co, and the Rock Island Railway Co., for the kindness shown to the members of this Congress, and for the concessions granted;

To the gentlemen of the press, who have attended and reported the proceedings.

The American Forestry Congress then adjourned to the call of the Executive Committee.

The Province of Ontario was officially represented by Messrs. D. W. Beadle and William Saunders; and the Province of Quebec by the Hon. H. G. Joly and Mr. Stewart Thane.

The following paper contains most valuable information upon the subject of

NEW AND NOTEWORTHY TREES, SHRUBS AND CONIFERS.

By W. C. Barry, Rochester, N. Y.

[*A paper read by request before the American Association of Nurserymen, Florists and Seedsmen, at their annual meeting, at Saint Louis, June 20, 1883.*]

During the last few years several beautiful and valuable new trees and shrubs have appeared. It is my purpose in this paper, to refer briefly to some which we have tested and consider most entitled to the consideration of planters.

Taking up the family of Maples first, we have the Japanese species and varieties, which, after having been tried for some time in various soils and localities, have, so far as I can learn, proven nearly hardy. It affords me much pleasure to furnish favourable evidence relative to this important qualification, for when these maples were sent out a few years ago, many persons, myself included, doubted their value for out of door decoration, supposing them to be too tender to resist successfully the severity of our winters. However, being greatly interested in them on account of their extraordinary beauty, we imported fine plants of the choicest varieties direct from Japan, gave them a fair trial, and now have large specimens doing finely upon our lawns at Rochester, where they have stood out unprotected the last three winters. Our experience is that young plants, until they become well established are liable to suffer injury from extreme cold. Hence spring planting is recommended for them, thus affording the plants a chance to become well rooted before the approach of cold weather. Protection with evergreen boughs the first winter is also suggested, and judicious pruning is attended with the most satisfactory results. In the spring, just before the buds start to grow, every tree should be carefully examined, and the dead wood, of which there is always sure to be some, removed. If the specimens do not grow vigorously enough, give them more nourishment, and cut them back severely. These are simple hints regarding their treatment, but nevertheless important; and if the suggestions are carried out, success can be recorded in the future where failure has been experienced in the past. The best varieties for general use are as follows: The normal form or type, *polymorphum*, is a tree of small stature, medium

growth, and regular outline, having rather slender branches, and small handsome foliage of a pleasing green colour during the summer, but turning to a rich crimson in the autumn. This species is, I think, destined to become very popular. The variety *sanguineum*, is a dwarf tree, having rich red foliage, which holds its bright colour till the middle of summer. During the months of June and July a specimen is a very conspicuous and attractive object upon the lawn. *Atropurpureum* is another variety of modern growth, having purple leaves, and when planted with the above produces an effective contrast. *Atropurpureum dissectum*, has slender branches, which show a strong tendency to droop, and its leaves are delicately cut, resembling fern leaves, and of a beautiful purple shade. *Japonicum* is another very distinct species of medium growth, with large, handsome, bright green leaves, the edges of which are scalloped. It grows more vigorously than polymorphum and its varieties, and bears some resemblance to the Red Colchicum Maple. There are several other varieties and forms, but these are the most beautiful and useful.

Now a suggestion with regard to the manner of planting. As these trees are what are termed slow growers, it takes some time for them to become effective. Hence, we advise the planter to arrange them in groups consisting of three or six plants. A very satisfactory effect will thus be quickly realized, and every year the group will become more elegant and attractive. For several years the propagation of these maples has been conducted on a very limited scale, owing to the difficulty of procuring stocks to graft upon, and the price of plants has consequently been quite high. These obstacles having been removed, we may hope soon to obtain these beautiful dwarf trees at a moderate cost.

Two new varieties of the Norway Maple have recently been introduced from Germany, and promise to become important acquisitions. These are Schwedlerii and Reitenbachi. Both have the vigorous, elegant, clean growth, for which the type is so justly esteemed. Schwedlerii has bronzed purple leaves, which appear to the best advantage during the spring time and early summer. As the season advances the leaves change to a duller shade which is less attractive. But in this respect it differs little from purple-leaved trees generally, as they all lose their richest tints during the hot summer days. Reitenbach's maple is of quite recent introduction, and while its foliage lacks the richness and brilliancy of colour, for which Schwedlerii is noted, its purple shade is more enduring and lasts till late in the season. Lorberg's cut-leaved Norway maple is also quite new, but it does not differ enough from the old variety, *dissectum*, to be of much value, at least such is my opinion at present. Dissectum is a rare and handsome variety, and has always been scarce, owing to the difficulty which nurserymen experienced in obtaining saleable specimens, its growth being always more or less crooked. Lorbergii seems to be a better grower, and as it can be propagated more successfully, it may displace dissectum. Among cut-leaved trees both deserve our highest regard, as their leaves are deeply cut, and they form elegant specimens. Woorle's golden-leaved sycamore, a recent novelty from Germany, has superb yellow-tinted leaves, which render the tree remarkably showy in spring and early summer. Planted with purple-leaved trees the effect is charming. The yellow hue is not of the character which indicates lack of health; on the contrary, it has a richness and depth betokening extreme vigour. Still another interesting form of the Norway is the curled-leaf. The leaves are of the usual size, but the lobes curl and turn inward in a curious manner, giving to the tree a unique aspect. This variety must not be confounded with the eagle's claw from which it is very distinct.

Acer Tartaricum ginnala is an ornamental variety of the Tartarian maple, of rather slender, yet vigorous growth, rounded, regular form and having small or medium sized foliage. Its health, freedom from insects, hardiness and handsome appearance combine to make it a desirable addition to the list of small trees.

Acer velutinum is a species brought to notice recently, but its origin I am unable to give. In general appearance it resembles somewhat the sycamore, but the foliage is thicker, of a dark green colour, and the petioles are deep red. The impression I have formed, after examining a small specimen, is that it will prove to be a distinct tree of considerable merit.

We have now studied the maples pretty thoroughly, and will pass to other interesting trees.

Memminger's horse-chestnut is a comparatively new tree, having showy pale yellow

foliage, suffused or sprinkled with white. This shade, though peculiar, is effective and beautiful, and a well developed specimen appears to fine advantage, especially in spring. Later on the delicate tints of its leaves fade under the effects of scorching sun, and then it reverts te the ordinary form of the horse chestnut.

Alnus tiliacea is a noteworthy tree, having the foliage of a linden and the growth of an alder. Indeed few would recognize it as an alder. Its fine pyramidal form and rich, glossy, dark green foliage render it an elegant tree.

The large, double-flowering almond, although it has been known to some extent for many years, deserves mention on account of its rarity. As a flowering tree it has few equals. A specimen about five years old is now in full bloom on our grounds, and I cannot refrain from expressing my surprise that so valuable a tree should be so neglected. The specimen I refer to is a mass of blooms, every branch and branchlet being literally covered with flowers of a delicate pink shade, and perfectly double like small roses. The double red, double pink and double white flowering peaches, are exceedingly showy and ornamental, and wherever seen elicit expressions of the highest admiration. How are we to account for their absence even in fine collections? Is it necessary to call them novelties in order to insure their recognition? At the present time I do not know any subjects more worthy of our attention and I strongly urge their propagation and dissemination.

Cerasus Japonica, rosea pendula, a weeping cherry from Japan, lately introduced, is destined to wide-spread popularity. Grafted standard high, its slender branches droop like those of the Kilmarnock willow, and form a symmetrical head which is sure to please admirers of this class of trees. As the Kilmarnock willow has become pretty generally disseminated, this introduction has enough merit to be ranked with it, and no doubt public appreciation will be shown in its behalf, and a large demand created for it.

Cercidiphyllum Japonicum is a distinct tree introduced lately from northern Japan, where it is said to attain large size. It is pyramidal in form, of vigorous growth, but slender and compact; foliage small, heart-shaped and some what like that of the Judas tree. Specimens have stood out uninjured in our grounds for three years, and we have no doubt as to its hardiness. Its propagation is not easy, hence this promising addition will be rare for sometime to come.

Variegated-leaved Tulip tree. We have in this variety similarity of likeness in all respects to the normal form, except in the leaves which are bordered with yellow, the effect of which is most pleasing. The young subjects which we have seen promise to grow in beauty as they acquire age, and a large well grown specimen will without doubt prove a most interesting object to lovers of rare and curious trees.

Phellodendron amurense or Chinese Cork tree comes from Manchuria, where it is said to attain the height of sixty feet. In general appearance and rapidity of growth it resembles the ailantus. Some authorities claim that it is destined to take the place of the ailantus, being possessed of all the valuable characterists of that tree, without any of its objectionable features.

Quercus concordia or golden oak is a variety of the English, which will undoubtedly prove to be a great favourite with planters as soon as it becomes better known. It is a rapid, vigorous grower, and its leaves are of a rich golden yellow colour, even from the time they appear in spring; and they increase in richness as the season advances, assuming their most charming tints late in the summer and fall. The colour is exceedingly grateful to the eye, and is so enduring that a specimen in perfection makes an impression which it is not easy to forget. Among golden-leaved trees there is certainly not another which can compare with it, particularly in autumn, and, when planted near a purple-leaved tree, the effect is grand.

The Fastigiate Birch is still a rare tree, although it was disseminated some time ago. It has the upright habit of growth, and spiry, compact form peculiar to the Lombardy poplar; hence it is quite unlike any other birch. It will be found useful to give variety to a landscape, and can be employed where the poplar could not, owing to the size which the latter attains.

A real gem among magnolias is Halleana or stellata, which, though it was brought some years ago from Japan, is rarely seen. The Chinese magnolias, usually cultivated, are distinguished for their size and stately appearance, and are great favourites with the

public on account of their remarkable flowers. Halleana is quite different from the other varieties, being of dwarf habit of growth, and forming a symmetrical bush. Its blooms appear very early in spring, before those of any other magnolia; a fact which tends to give additional value to the plant for spring decoration. For the margins of groups or borders it will be found extremely useful, and it is sure to gain numerous admirers wherever it is disseminated.

Van Geert's golden-leaved poplar has showy yellow foliage, which renders it a highly effective tree in groups. For a long time we questioned the value of this variety: but its bright and enduring shade makes it conspicuous, and we think it merits attention.

The purple, myrtle-leaved Elm is a new variety of medium size, having small myrtle-like leaves of a dark purple colour. The foliage is pretty and the colour permanent. It has not been my good fortune yet to see large specimens: but judging from the small plants I think we have in this novelty an addition of high merit. The colour of the leaves is very much darker and more lasting than that of the old variety *campestris purpurea*. There are several other new and very promising kinds of elms, with variegated foliage, but I will defer a consideration of them until they have been better tested.

A very well defined and curious variety of the English elm is that called *monumentalis*. Its habit of growth is erect, compact, and its form conical, resembling as its name implies, a monument. It grows slowly, and can be employed in small grounds advantageously.

Ulmus Wredei aurea is a golden-leaved elm, which bids fair to become very valuable. The leaves have a rich, warm yellow tint, which is permanent, and consequently a fine specimen arrests attention and commands admiration.

SHRUBS.

The common red dogwood is much esteemed by planters for winter decoration, on account of its dark red or crimson coloured bark. The variety to which we now draw attention is called Sibirica, and its bark is of a bright red colour. In the depth of winter the bark is brightest, and a single plant or several together form a most interesting feature in a garden. In the summer its beauty is also apparent, for the foliage is of a pleasing green colour and the white flowers which it produces in spring are followed with purple fruit. This is not by any means a new shrub, nevertheless it is rarely found. Its merits have been withheld from the public long enough, and I trust it will soon receive the recognition to which it is justly entitled.

Shrubs of this character are doubly valuable, being ornamental and effective both in summer and in winter. The crimson and red branches of these two varieties when placed in contrast, produce a very pleasing result.

Cornus sanguinea elegantissima. In this we have a new claimant for public favour. Its origin I cannot give; but when in Europe two years ago, I found it in one of the nurseries, and was much impressed with its beauty and value. Fancy a red dogwood with handsomely variegated leaves, or rather having its leaves broadly edged with silvery white. Cornus mascula variegata has long been held in high regard on account of its distinctly variegated foliage. In some particulars this new variety of sanguinea will surpass it. The variegation is brighter and the shrub more rapid and less formal in its growth, hence it can be made use of in a greater variety of ways. As a new shrub of high promise it will certainly receive a great deal of attention.

Prunus pissardi, or purple-leaved plum, is a novelty sent out from Paris last year. Its leaves are purple, the colour is permanent, and I think this new plant will prove to be an acquisition.

A pure white Weigela of good habit of growth, has long been sought after. During the last few years several so called white varieties have been ushered into notice, but the flowers, nearly always turned out to be blush and frequently rose-coloured. Hortensis nivea the old variety, which bears pure white flowers, and which is comparatively well known to nurserymen and florists, has not been disseminated, being extremely difficult to propagate. Its habit of growth also is quite unsatisfactory. Hence *candida*, which

is a strong upright grower and an abundant producer of pure white flowers, will at once be pronounced a desideratum. It has the additonal merit of being a perpetual bloomer, flowers being upon the plants nearly all summer. Nurserymen will have no difficulty in obtaining a stock, as it can be easily propagated.

Other new weigelas which appear to be very promising, are Lavallei, a variety with reddish purple flowers, the darkest of any. Its habit, however, is loose and spreading. Edward Andre, a latter introduction, bears flowers of a very dark shade, and is a better grower.

P. Duchartre produces flowers of a clear amaranth shade, which contrasts finely with the yellowish foliage of the plant. Hendersoni bears medium-sized flowers of a red colour. Both of them have a good habit and are free bloomers.

Spiræa cratægifolia is not a new variety, but still quite rare. It resembles the well known lance-leaved, in colour, size, and form of the flower, but differs from it in foliage; and it has the valuable characteristic of being more hardy. I consider lanceolata a grand shrub, and in localities where it is hardy it comes out in spring, loaded with pure white blooms, and a large plant resembles a mass of snow, affording a striking contrast with the profusion of green which prevails at that season. But it often happens that much of the flowering wood becomes injured, hence, an equally fine variety, possessing greater hardiness will be an acquisition. I think we shall realize the improved form in *cratægifolia*. While on this subject, I should not fail to refer to another improved variety of lanceolata, which has given much satisfaction. It is called lanceolata robusta, which appears to be more vigorous, hardier, and its flowers are larger.

Spiræa Van Houttei is another form, distinguished for its hardiness.

There is another addition to the family of spiræas which is quite novel. It has received a rather indefinite name, being called species Japonica. It appears to be closely allied to the type callosa, and like that species, does not grow large, but forms a symmetrical bush and yields an abundance of flowers all summer. Its regular shape and small habit of growth will make it useful for borders of groups, and for planting singly on lawns of small extent.

The golden syringa is a most charming golden-leaved shrub. When planted alone or associated with other shrubs in a group, its bright and delicately tinted leaves create a pleasing effect.

We now come to the consideration of one of the most important acquisitions made recently, Xanthoceras sorbifolia, for this is the name of the new aspirant. It comes from Mongolia, or the centire of China, where it was found by the Abbe David, and brought to Paris about 1868 by a Frenchman named Pichou. It is of medium size, forming a shrub or small tree not exceeding ten to twelve feet high. Its leaves resemble somewhat those of the mountain ash and its flowers are five-petaled, white, and reddish copper coloured at base, and disposed in racemes. They appear in April and May at the same time that the leaves are developed. The flowers are succeeded by fruit.

CONIFERS.

Having now discussed the merits of the best new flowering shrubs, we will proceed to examine a few of the best new coniferous trees.

First upon the list and perhaps one of the most important gains of many years is the Rocky Mountain Blue Spruce, (*Abies pungens.*) Its chief merits are great hardiness and beauty. So much disappointment has resulted from planting tender evergreens, that planters generally are commencing to lay great stress upon hardiness, and it is right that they should do so. What advantage is there in growing fine specimens of rare species, only to lose them as they reach perfection. Two years ago when in Paris, I saw in every section of that grand city, ruined specimens of noble and rare evergreens, which it had taken years of patent attention and care to develop. To be sure these extremes do not come every year, but as I stated in a former paper, we cannot place too much importance upon the qualification of hardiness. The blue spruce is the bluest of evergreens, and a well developed specimen is a sight that will charm every lover of beautiful trees. I would like to say something about the beautiful Retinisporas, plumosa aurea and argentea, and

filicoides. These are charming evergreens of moderate growth and medium size, and well adapted to plant in small places; but they are tender with us, and must be protected with a few branches of evergreens, or they will suffer in winter. Those who are willing to devote extra care and attention to them should introduce them to their gardens by all means. But for the general planter in cold regions, we cannot yet recommend them.

Pinus ponderosa, the heavy wooded pine of California, has proved to be a most valuable accession. It is perfectly hardy, of fine form, has long distinct foliage, and is a vigorous grower. Pinus Pallasiana has bluish foilage, and is hardy and beautiful. Pinus Jeffreyi, from California, has also succeeded admirably, being hardy and very ornamental.

Abies parviformis is a dwarf spruce, of slow growth and small foliage. It is an excellent small evergreen; very hardy and will be useful for small grounds. Abies nigra Doumetti, is a handsome form of the black spruce, of dwarf habit and compact growth.

The Silver-variegated Japan Juniper, with foliage of a glaucous green colour, and the golden Japan Juniper, which has golden yellow foliage all the year, are two varieties to be commended.

The Golden Yew, Taxus elegantissima should not be overlooked, nor should we forget the pyramidal Arbor-Vitæ or Geo. Peabody, with its golden foliage.

The Golden Yew and Geo. Peabody are undoubtely the two best golden evergreens. And among the Arbor-Vitæs there is nothing hardier or more handsome than the pyramidal. The new varieties of Arbor Vitæs introduced by Mr. Robert Douglas, are very promising.

I will not occupy your attention longer, but in closing I desire to say that it is a great satisfaction to those engaged in horticultural pursuits to know that there are always new pleasures to look forward to. With each year comes some new tree or plant to engage our attention, and demand our care, and our interest is never permitted to flag, even for a moment. What a gratification it is to aid in the dissemination of a really valuable article. Joy enters the home when the new plant arrives; the new comer is welcomed, receives the best of care from loving hands, and if it proves worthy, affords genuine happiness to the household. But if perchance the great expectations should not be realized, and the high priced novelty should prove worthless, what sorrow and disappointment follow. Let us therefore exercise a care that we distribute only good things, and thus contribute to the welfare and happiness of our fellow beings.

In the summer of 1882 Mr. Charles Gibb, of Abbotsford, Province of Quebec, in company with Professor Budd, of the Agricultural College, of the State of Iowa, visited Russia for the purpose of ascertaining what fruits, trees and shrubs, growing in climates similar to our own, could be procured from that country likely to be of value to us. On his return he prepared his *Hasty Notes on Trees and Shrubs of Northern Europe and Asia*, for the Montreal Horticultural Society, which were published in the Eighth Report of that Society, 1881-2.

At the request of your committee, Mr. Gibb has kindly revised and enlarged his notes and furnished them to us for publication in this report. We take much pleasure in calling very particular attention to Mr. Gibb's paper, as being full of very interesting information of great value to all who reside in a climate of great extremes, as is that of a large part of our Province. Many of the trees and shrubs mentioned by him are worthy of extensive trial in Ontario, as being likely to prove of value for economic purposes, or for ornamentation, or for both. These trees, although botanically identical with those of western Europe, are more hardy. Seeds of these obtained from Russia and grown in Ontario will produce more hardy races than those we have hitherto obtained from England, France and Germany.

ON TREES AND SHRUBS OF NORTHERN EUROPE AND ASIA.

By Charles Gibb, Abbotsford, Quebec.

With notes added in December, 1883.

The experience of the Russian horticulturists is just like our own. They have searched central and western Europe for new species, and have found among the many tried a few hardy and valuable. They have searched for new species on this continent, and in some instances, like ourselves, have received the southern forms of hardy species. Have you the Ash-leaved Maple? I ask Dr. Regel, the Director of the Botanic Gardens at St. Petersburg. "Yes, but it is not hardy here." It is the only street tree in Winnipeg, I replied. "Then I have some Southern form," he said. Yes, such is his experience and ours, and such must continue to be our disappointing experience until we establish direct communication with our like climates in the old world. The Russian botanists had tried to find us years ago. They had endeavoured to get into correspondence with the botanists of the colder parts of Canada through their Consul at New York. They failed in this, but turned their attention to the cold climates eastward to the Pacific.

In the Imperial Botanic Gardens at St. Petersburg, we find the flora of the cold inter-continental climates of eastern Russia, Siberia, northern Turkestan, Soongaria, Mongolia, Mantchuria, and Amur, our own like climates in the old world.

Europe may well be proud of her botanic gardens. The large outlay of the European Governments seems to have been money well invested. Botany in its relation to agriculture, horticulture and forestry is a science deemed too valuable to be suffered to remain untaught. Russia is in no way behind in this matter. At St. Petersburg what cannot be grown out of doors must be grown within, thence they have there the largest number of species under glass in the world. Not only in the larger cities, Moscow, Warsaw and Kiev, but in the smaller towns like Kazan, Voronesh, Orel and Penza (the last not visited by us), we find Botanic Gardens such as we might feel proud to own.

A generation or two ago, when Loudon and Lindley were at work in England, the Royal Horticultural Society imported from all parts of the world the plants likely to be useful or ornamental in England. They sent agents to China. Robert Fortune, however, spent much of his time at Canton, almost in the tropics. He was not in search of plants suited to the climate of Quebec, and yet some of our best hardy shrubs were brought to light at that time. This was probably the age of greatest horticultural interchange the mild temperate regions have ever seen, and upon it is largely based their present advanced horticulture; and yet this work has been of only minor use to us.

In the tropics, and in the sub-tropical climates, the British colonies have taken the lead in this matter of botanic gardens; wherever there is a colony of any size there almost always is a botanic garden. Ceylon, India, (several), Singapore, Hong Kong, Queensland, Victoria, South Australia, New Zealand, Tasmania, Mauritius, Cape of Good Hope, and many others which I am not sure enough to note have their botanic gardens. Also in the West Indies, Jamaica, Trinidad and Demarara. The East and West Indies have interchanged for over 100 years! Read the reports of the Jamaica and other Botanic Gardens in the library of the Montreal Horticultural Society, and you will see that it is this botanic interchange which has built up the present enormous export trade of the tropics.

Now there are two points to which I wish to draw special attention.

I. We in the cold North have hardly begun to exchange with our like climates in the old world.

II. In Canada we have no Botanic Gardens.

As to exchange with our like climates, that will begin next fall. As to botanic gardens we must speak less hopefully. Our horticultural societies have done good work. Our universities do not neglect the science of botany. We have some fair

collections of trees, some horticultural gardens; but our Government has never seen the need of expenditure upon botanic gardens, as have the Governments of the European powers, and the Governments of other British colonies. *That this great Dominion of Canada, which stretches from the Atlantic to the Pacific, should be without a botanic garden, or a series of such gardens, is a fact without parallel in British Colonial history.*

NOTE.—It was at a meeting in Winnipeg, in August last, at which Messrs. Joly, Saunders and Beadle urged the formation of the Manitoba Horticultural Society, that I was speaking of the good work which had been done by the Botanic Gardens and testing grounds of the other British colonies. Mr. J. R. G. Moffatt then brought to notice the interesting fact that it was not the British colonies who began this work, but the early Dutch, Portugese and Spanish colonies, in their earliest days, 200 and even 300 years ago. Mr. Moffatt had visited the Botanic Gardens of Wellington, Aukland, Christchurch, Dunedin and Nelson, in New Zealand; of Adelaide, Melborne, Sydney and Brisbane, in Australia; of Hobart Town and Launceston, in Tasmania; of Durban, Port Elizabeth and Cape Town, in the Cape colonies; of Colombo and Point de Galle, in Ceylon; of Penang and Singapore. Yes, Mr. Moffatt had visited these, or most of these, and others (not British) as those in Java, Sumatra and the Philippines. He had studied their products and their work. He urged the establishment of testing grounds, because he *knew* the value of them, and it is because I have personally examined the testing grounds in Jamaica, plantations upon high levels and low levels, on the dry scorching seashore, and on the misty mountain tops 6,300 feet above it, and because I have noticed how dependent the prosperity of this island has been upon this experimental work, that I said above, "that it is this botanic interchange which has built up the present enormous export trade of the tropics."

Should this great government work be left mainly to private individuals? Surely not.

On the European Forestry plantations I must say a few words. The planted districts in France we did not pass through, but we obtained some idea of their method of work by visiting the Forest School at Nancy. One may get some idea of that work by reading their reports now in the Montreal Horticultural Society's library. In Germany we were continually passing extensive plantations of Scotch Pine (*Pinus silvestris*), bordered with Norway Spruce (*Abies excelsa*). The Germans are most economical in the use of wood, so that pine so extensively planted must ere long become an article of export. But where are the hardwoods needed for a thousand different purposes. Strange this exclusive planting of one species. So well are the forest plantations of Wurtemburg cared for, that the term "high culture" could with justice be applied to them. Evergreens are easily and cheaply propagated in the climate of Germany, and hence the method of planting adopted is that of close crowded planting, which of course, necessitates continued thinning.

In Russia the Government controls, in fact "works," a large proportion of the forests of the Empire. Of natural and planted forest the Government held in 1878 what is equal to 351,780,000 acres, exclusive of Siberia, besides about 51,590,000 acres of scrub at the far north. In 1878 they received from these forests an income of 10,648,000 roubles, and expended on new plantations, and working expenses, 6,400,000, leaving a profit for the year of 4,248,000 roubles, or about $2,124,000. The extent of the plantations in Russia I cannot state. I know, however, that in three of the Steppe Governments in Southern Russia, 22,880 acres have been planted within the last eight years. There are 762 forest stations under the charge of a like number of foresters; and as we journeyed over the prairie regions of Russia, we were continually coming across some forestry station with its surrounding plantations. Like the beet sugar factories they are scattered all over the otherwise treeless plains. Unlike the plantations in Germany the Russians have planted not only their native forms of the Silvestris pine and Norway spruce, but largely of Pedunculata oak, ash and basswood, and somewhat of larch, birch and poplar; also in the southern steppe regions, yellow locust, maple, elm, honey locust and others.

The Imperial Forestry Association was in session at Moscow at the time of our visit. Delegates from all parts of European Russia had assembled under the presidency of Dr. Arnold, Director of the Agricultural College, at Petrovskoe Rasumoskoe, near

Moscow. They meet biennially. We drove to the Government forests in coaches holding eight persons each, on side seats, back to back, drawn by four stallions abreast. After luncheon I was called upon (my friend, Mr. Budd, was not present that day) to plant an oak, which is the joint property of the Canadian and United States Governments, and which may be worth several hundreds of dollars some centuries hence.

These foresters are a fine set of men. It was one of this staff who, of his own accord, and at his own expense, accompanied us through the fruit-growing peasant villages of Kazan, sharing our discomforts and sleeping upon a bundle of hay when necessary.

As to the climates of the places I name, I must refer to my report on "Russian Fruits." Had I had more time I would have shown what these climates are, not from meteorological tables, but from the flora in their botanic gardens. I would merely say that the mildness of central Europe one may judge by the trees growing in the well-sheltered Botanic Gardens at Warsaw. Here, in latitude 52½°, we find Sophora Japonica ten or twelve inches in diameter of trunk, growing from an old stump which had grown to a diameter of two and a-half feet; Juglans regia had grown up with two trunks, each twenty-two inches across; Tulip tree, large and low branched, measuring three feet across its stump at the ground; Gingko, of eight inches diameter; Cornus mascula, twenty-five feet in height, and thirty feet across its extended branches. The horse chestnut grows luxuriantly, and attains very large size at Warsaw.

I must say that these trees could not be grown in open exposure near Warsaw, for such is the ameliorating influence of a large city that the shelter it affords is equal to a difference of more than fifty miles in latitude. Proscau in Silesia, on account of its elevation of 720 feet, its open exposure and cold soil, is a rather more severe test of hardiness than the sheltered city gardens of Warsaw. North and east of Warsaw the climate soon becomes severe.

These notes I have written as addenda to a somewhat lengthy article on "Ornamental Trees," written by me last year for the seventh report of the Montreal Horticultural Society, so that what I say is merely a jotting down of things not said then.

NOTE.—This is a sequel to my report on "Russian Fruits," and should be read in connection with my notes on climate and table of temperatures.

I would also urge the study of the reports written by Mr. Budd, Professor of Horticulture in the State Agricultural College, at Ames, Iowa, my fellow-traveller. His notes are of great value to the north, and I will freely quote from them.

ACER—Maple.

A. Campestre.—In my paper on "Ornamental Trees," I spoke of this as a tree or shrub that would prove hardy, if only we obtained our seed from northern stock. Its beauty in Central Park and other places had made me wish we had its northern forms. In the Imperial Botanic Gardens at St. Petersburg, we find a fine specimen, eighteen feet in height, apparently quite hardy. Another in the Botanic Gardens at Orel, thirty feet; this latter, however, not cork-barked. In the grounds of the Agricultural College at Petrovskoe Rasumovskoe, near Moscow, their stock did not prove hardy. It is a native tree north of Kursk, in central Russia, and runs thence north-west into the Baltic provinces. Further south it grows to larger size. In the Botanic Gardens at Warsaw there is a tree twelve inches in diameter of trunk, and at least forty-five feet high, not cork-barked, and in the Vienna Botanic Garden, twenty inches in diameter of trunk, and forty feet or more across its extended branches. This, too, is not cork-barked. A tree capable of standing drought well. I am at a loss to know what name to give this tree. English cork-barked maple will not do for a tree worthless to us if grown from English seed; a tree not always cork-barked. Let us procure seed of this pretty shrub maple—seed of northern growth. We need direct communication with the botanic gardens, and nurserymen and seedsmen of our own like climates in northern Europe.

A. negundo fol. variegatis argentum.—This is a variety of our ash-leaved maple, with white-edged foliage. It is very ornamental, and largely used, top-grafted in central

Europe. Further north, grown as a low shrub with slight protection, otherwise not at all hardy in extreme climates.

NOTE BY D. W. BEADLE.—The foliage of this tree unfortunately is badly burned by the hot summer sun south of the line of the Great Western Railway, so much so that the tree cannot make a healthy growth. In my own grounds it has at last perished from want of sufficient leaf action to ripen the wood.

A. platanoides (Norway Maple).—We did not find this tree grown in as large quantity in Russia as I had expected; nor did we even find specimens of it as large as our own sugar maple. We find it as a street tree, and in gardens in all the Russian towns, but in limited quantity only. I noticed on the Volga, in the dry regions, that the trees growing there, trees looking just like the platanoides of western Europe, stood drought remarkably well.

Var. dissectum.—This pretty thing we found in severe climates, and in Vienna we saw a specimen eight inches in diameter of trunk, with a dense, round head, nearly thirty feet in height, showing that it attains larger size than I had expected.

Var. fol. digitalis we say only at the Pomological School at Proskau, eastern Prussia. A small tree with leaves still more cut than dissecta.

Var. Reitenbachi a curious and a pretty tree. Leaves, dull brown in summer, and in spring, red. I do not remember seeing it north of Warsaw.

Var. Schwerdlerii.—A maple with young shoots bright red. Quite hardy at Riga, says Mr. Wagner. We did not see it further north.

A. Tartaricum (Tartarian Maple).—This tree is a native near Moscow, and may be seen in the botanic gardens and parks in the severest climates we visited. It is an "entire-leaved" maple, grows into a large bush, and is decidedly ornamental. It is a pity that the trees of it for sale in the States are not to be relied upon for hardiness. We must get northern stock.

Var. Ginnala (tegmentosum of some catalogues.)—A very pretty shrub maple from Amur, noted as quite hardy at St. Petersburg, though only fairly hardy at Riga. My Moscow notes do not mention it. Hardy enough for Montreal, I should expect.

ÆSCULUS AND PAVIA—Horse Chestnut.

As we wandered from place to place we found decided variety in foliage of this tree. Mr. Budd used to notice the thickness of leaf of the trees in some districts, as likely to stand the dry air of the Iowa prairies. The best collection we saw was in the Botanic Garden at Munich. Here special attention had been given to making a large collection. Specimen trees at St. Petersburg, Moscow, and Volsk looked as if out of their latitude. One thing, however, we observed, and that is the hardiness of the *Pavias* or smooth-fruited horse chestnuts, and these *Pavias*, we were told in several places, were European, not American.

ALNUS—Alder.

There are some beautiful shrubs among the Alders. *Imperialis* is said to be the least hardy, and yet I would expect it to thrive in a sheltered city garden in Montreal. *Incana laciniata* has a dull, sombre tint, very unusual; leaves deeply cut, and very ornamental. It seemed and was said to be, quite hardy in the nurseries at Riga. *Incana pinnatifida* or *acuminata* in the Botanic Garden, St. Petersburg, is a large bush twenty-five feet in height, with a trunk twelve inches in diameter; foliage dull in colour and deeply cut. From my notes it must be very like Laciniata. *A. glutinosa oxyacanthafolia* is well named, and, like those above, bears no resemblance to an ordinary Alder. It is light and airy, and rather pretty, but sparse of foliage, and should be headed in to make it appear to good advantage.

AMELANCHIER—June-berry.

We found nothing of special value, but I must speak of kinds which have already found their way into the west, probably from Europe. A dwarf variety has been grown

by a German in Greene Co., Iowa, for the past twelve years. Mr. Budd, who visited the plantation, says "that the plants were literally loaded with a dark, nearly black fruit of good size and excellent quality;" even the sprouts, not more than a foot in height, were bearing. The bushes when full grown were two to three feet in height, bore fruit the size of black currants, and all this time had been grown and marketed under the impression that they were huckleberries. This variety was imported from Germany. Another colonist, near Davenport, Iowa, has had four acres of a somewhat similar berry, and has produced fifty to sixty bushels in a season from the bearing portion of his plantation. This has been over twenty years on trial, and its origin in not traceable.

Again, Mr. Budd draws my attention to the *Amelanchier alpina*, received from Texas, and which is a native of the Andes of Mexico, and apparently quite hardy at Ames, Iowa. It grows a foot or more in height, and has been highly thought of in Texas, where it has been grown as a huckleberry.

NOTE.—A variety of *A. Canadensis oblongifolia*, obtained the silver medal of the Massachusetts Horticultural Society. The plants were received from Davenport, Iowa, in 1874, and fruited abundantly in 1878. Mr. B. G. Smith, Treasurer of American Pomological Society, the worthy recipient, says the fruit is mild and delicate in flavour, and about the size of black currants. Possibly this may be the variety spoken of above.

ARIA—White Beam Tree.

This is a medium-sized tree, allied to the mountain ash; somewhat like it in blossom, and in the fact that it bears clusters of fruit.

The largest collection we saw was in the grounds of Mr. Wagner, at Riga, and of these, *Nivea* specially struck me, on account of the snowy whiteness of the under side of the leaf. This tree would be specially beautiful in a windy situation. Of others, *Acerifolia* has a very long leaf very much indented, and, I suppose, lobed. *Corymbiflora*, like *laciniata*, an indented rather than a cut-leaf. *Cretica*, leaf small, but white on under side. *Eliptica*, very broad leaf, white underneath. *Glabrata*, leaf glossy on upper surface, and quite unlike others. *Lantana*, leaf lanceolate, and white beneath. *Latifolia atroviridis*, leaf larger and broader. *A. lutescens*, of M. Simon-Louis, at Metz, is remarkable for the whiteness of the under, and even of upper side of leaf.

ARMENICA—Apricot.

Let us add the Apricot to our list of hardy fruits as soon as possible.

Mr. Maximowitch, the Primus Botanicus of the Botanic Gardens at St. Petersburg, who has spent many years botanizing that vast country eastward to the Amur, says that in Soongaria, in eastern Turkestan, at the eastern end of the Altai range, it is growing in quantity, and that there the boars, and the bears, and the natives, fight it out as to who is to have the fruit. The fruit is small, that is, about one inch in diameter, but sweet, and pretty good.

In the southern parts of the Province of Mantchuria, there is, says Mr. Maximowitch, a variety of apricot different from those in cultivation. They do not thrive well near the coast, but in sheltered situations inland they grow in great quantity. They are really good, and are sold in quantity in the Pekin market. Could we not get the pits of this apricot expressed to us by our Consul at Pekin? Surely this might be done.

AZALEA.

A. mollis has a large salmon-coloured flower, a variety brought by Mr. Maximowitch from high altitudes in Japan. It has proved quite hardy at St. Petersburg. I see that Ellwanger and Barry, of Rochester, N. Y., speak of the great beauty of *A. mollis*, but say it is only half-hardy and needs protection. What difference in hardiness there is in the offspring of plants of different elevations.

BERBERIS—Berberry.

These I have not made notes of. However the seedless Berberry is recommended as an acid little fruit—good for preserves. The Chinese sweet varieties, which are said to be dried like raisins by the Chinamen, I did not see.

BETULA—Birch.

The beauty of the Russian Birches is a matter of general remark by travellers. In general appearance they are not like our own, nor the birches imported from western Europe. The *alba* of Linnæus, or *pubescens* of Ehrhart, has a leaf in shape like our canoe birch, but smaller and velvety. Sometimes it is very aromatic. It is probably the fastest growing, and is suited to moist soils only, and is the best variety for the far North. The trunk is mostly white, and that almost to the ground. These notes were given to me by a forester who had made a special study of the question. On the other hand, the *alba verrucosa* is a weeping or drooping tree, with triangular leaf, a leaf like our common white birch, and when over ten or twelve inches in diameter of trunk the bark becomes rough and covered with black clefts.

This latter, this weeping form, is the one I wish to draw special attention to. It is the birch growing upon the dry soil of the Petrovskoe park near Moscow, that park which is the summer resort of the residents of Moscow. The most attractive feature of this park is its avenues, and groves of weeping birch. Some of these groves seem to have sprung up as though planted irregularly at distances of from six to nine feet apart, each way. Thus the one thing that presents itself is a vista of bright, translucent, white-barked trunks. The effect is almost magical, and could not be produced by plantations of our dull-barked birches. What an attraction to our Mount Royal park, Montreal, such a grove would be. It would become the haunt of our snowshoe clubs by moonlight, in summer the resort of picnic parties and pleasure seekers. How beautiful our Montreal park could be made by the judicious planting of trees of varied form and foliage.

B. Dahurica, we saw at St. Petersburg, an oldish, slow-growing, rough-barked tree. *Costata*, too, usually noted as from the Amur. Much like our canoe birch in bark and leaf, but has a slow-growing, stunted look.

CALYCANTHUS.

Some northern forms, *C. Sibirica*, seems quite hardy at the Botanic Gardens, St. Petersburg. Flowers whitish yellow.

CARAGANA.

The most widely popular of the Russian shrubs is unknown, I may say, in Canada. In western Europe we scarcely notice the Caraganas, except in the botanic gardens. In central Europe they become much more generally planted ; even in mild climates like Prague, we find them common in the city gardens. It is a plant capable of enduring great extremes of cold and drought ; the best shrub for planting on the confines of the cold desert, and therefore widely popular in the cold, dry North.

On the Finland road, that suburb which is the resort of the townspeople of St. Petersburg during their short, cool summers, the caragana is the common hedge plant. It and the red berried elder are the commonest shrubs. In the tea gardens of the Petrovskoe park near Moscow, where the Russians meet to enjoy their tea around their hissing samovars, the dividing screens are caragana. At Moscow and Kazan, it and the Siberian thorn are the common hedge plants.

This arborescent caragana is known also as the Siberian Pea tree and in France sometimes called acacia de Siberie. It is a shrub usually from eight to fifteen feet in height, although at Saratof I saw it as much as thirty feet. It has a very small dark

leaf, and may be trained to grow in tree form. There are many varieties ; some catalogues offer thirteen or fourteen varieties. The most beautiful to my mind is *pygmæ pendula ;* top grafted, it forms a delicate, pendulous head, very graceful and ornamental. I fear there is some confusion in the names given to these varieties. I have seen the names gracilis, microphylla and horrida given to what appeared to me to be this. *C. ferox* or *spinosa* is spiny, stiffer in growth, and has more foliage ; it, too, may be top grafted. Of other kinds I would mention *C. altagana Dahurica*, a straggling bush with leaf smaller than arborescens. *Frutescens*, a good shrubby little bush from the Altai Mountains and Turkestan. *C. Jubata* is from Mongolia, and from the cold district of that coldest of all countries, eastern Siberia. This, however, is positively ugly.

CORNUS—Dogwood.

One variety of the Cornus I wish to draw special attention to, the *Cornus alba fol. variegatis* or *C. stricta* of some catalogues. It is a low shrub with bright, white-margined leaves, very showy and attractive, and perfectly hardy. A very great favourite in the nurseries at Riga, a great favourite wherever known.

There is also a white-margined variety of the *Cornus mascula*, very pretty indeed ; hardy at Warsaw, but not hardy at Voronesh or Riga. The ordinary *Cornus mascula* is not to say hardy at Riga. At Warsaw, in the Botanic Gardens, we find a tree of it eighteen inches in diameter of trunk and twenty-five feet high, and at least thirty feet across its extended branches.

Andrew S. Fuller, in his " Fruit Culturist," recommended the introduction of the Cornus mascula as a fruit-bearing bush. At the nurseries of Simon-Louis at Metz, where they have six kinds, the *C. mascula macrocarpa* is considered the largest in size, and the best in flavour. This was corroborated at other places. It is worthy of trial at Toronto and southwards.

CORYLUS—Hazel.

On this I have nothing definite to say. At Vienna we saw a specimen of the *C. colurna* or Tree-hazel, thirty feet in height. Further south in Turkey it grows to a height of fifty or sixty feet, but is not hardy in cold climates. At Reutlingen Mr. Lucas showed us the fruit of a number of varieties bearing large nuts of different shapes, but I cannot say if likely to prove hardy here. In the extreme climate of Kazan we saw lots of wild hazel, but the fruit is small ; no improvement upon our native species.

Nut culture has been tried at Riga, and Mr. Goegginger suggests that we should try the *Giant de halle.*

COTONEASTER.

We saw many hardy varieties. In the garden of the Agricultural Academy at Petrovskoe, *multiflora*, *vulgaris* and *lucida* seemed all right. In the Moscow Botanic Garden we saw one variety bearing red berries, and another blue ; both seemed quite hardy, so was lucida. *Acutifolia* grows to a height of six feet, and seemed quite hardy at some points in northern Russia. I saw many hardy forms, but did not take any trouble to look them up.

CRATÆGUS—Thorn.

The Oxyacantha, or Quick, is the common hedge plant of central and western Europe. On our way to Russia we passed thousands of miles of this hedge : along the railways, along the roadsides, often separating suburban properties. We began to lose sight of it on the way to Warsaw. However, it is quite hardy there and is grown a good deal, but we cease to find it as a hedge plant beyond Vilna. At Riga it is not hardy, and from thence northward it is replaced by *Sibirica.* On our return journey we find the Oxyacantha again at Kiev, large trees of it in the Botanic Gardens.

such as one sees upon estates in England. The hardiness of this plant could no doubt be increased by getting seed from its north-eastern limits of growth.

The *Sibirica*, or rather *C. sanguinea* of Siberia, is a good hedge plant. Much like some of our own thorns, but I think of rather faster growth. Good hedges of it at Riga ten feet high. In the College Gardens at Petrovskoe, Mr. Shroeder points it out as perfectly hardy, so too is *Crus-galli*. *Nigra* also is all right. *Monogama* has a pretty cut leaf, and is fairly hardy, not as hardy as the above.

CYTISUS—Laburnum.

Here, again, are some hardy forms, although the same species from Scotland will not endure our cold winters.

In the Botanic Gardens at Munich we found alpinus growing to a height of over thirty-five feet, with a dozen trunks from five to twelve inches in diameter.

In the severe climate of Orel, in central Russia, we find a tree of alpinus which seemed quite hardy. The northern nurseries all grow cytisus, and these hardy varieties are well worth looking up.

ELEAGNUS—Wild Olive.

This is a race of bright, silvery leaved trees and shrubs of great ornamental value.

In the grounds of the Pomological School at Proskau, we find a shrub three feet high with gray, silvery leaves three inches long and an inch or more wide. We saw it again in the Botanic Garden at Moscow, apparently hardy. It was not named. This is very ornamental and should not be lost sight of.

E. angustifolia. In moderate climates this grows to a large size. At Warsaw we find a tree two feet in diameter of trunk and thirty feet high, old, and on its decline. In the cold climate of Orel we saw a tree thirty-five feet in height, but I do not remember it farther north. It has long, narrow leaves, white on under side, bright and pretty. Of its blossom and fruit I cannot speak.

E. longipe, of Japan, we saw at Kew; a shrub six feet high, bearing large quantities of spotted red berries, like oblong cranberries. At Verrieres, in the garden of M. Henri de Vilmorin, we again see this plant bearing heavily; fruit red, a nice acid, fully equal to cranberries, and as free from seed. It seems a very abundant bearer, and well worthy of introduction as a fruit-bearing plant—a plant likely to yield quite as much of a fruit as good and as saleable as cranberry. The only question is its hardiness. It should be tried with us in sheltered corners, where the snow-drifts would be likely to cover it. In many nurseries this is known as *E. edulis*.

FAGUS—Beech.

The European Beech is not as hardy as our native species. It will not thrive at St. Petersburg, whereas our own is found fifty miles north of the city of Quebec. I observed, however, that the cut-leaved beech (*F. syl. incisa*) is hardier than the purple-leaved, and may be tried in rather severe climates. There is a very fine specimen of the cut-leaved in good health on the grounds of Mr. Wagner at Riga.

FRAXINUS—Ash.

The foresters in Russia prefer the American ash to their native species. So do the Forest Schools in western Europe. The *excelsior*, however, grows to greater size; one in the Botanic Gardens at St. Petersburg rises from the ground with six trunks from five to fifteen inches in diameter. The American is said at several different points to be the hardier. This seems strange, for at the Botanic Garden at Kazan we are told that *excelsior* was indigenous in that government. The variegated form of our native ash (*F. Amaucubaefolia*) we find at Moscow and other places. The single leaved ash (*F. exc. mono-*

phaylla) has grown to the height of twenty feet in the Moscow Botanic Garden, and seems quite hardy, whereas little trees of mine at Abbotsford suffer. The weeping ash *(F. exc. pendula)* is fairly hardy at Riga. The young shoots are sometimes injured there. *F. juglandifolia subintermedia* may be seen in the Botanic Garden, St. Petersburg; a tree twenty-five feet in height and apparently quite hardy. *F. mantchurica*, a fine tree, quite hardy at St. Petersburg, and grows to a diameter of three feet in its native land.

GENISTA.

NOTE.—Several species and varieties of this small shrub are worthy of trial. *Genista pilosa plena*, flowers abundantly in June; *G. tinctoria* is hardy even at Moscow; the double flowering yellow of Germany we did not see north, but it will no doubt prove hardy with us.

GLYCYRRHIZA.

G. echinata.—A shrub like a bastard indigo, bearing large balls of rough tufted seeds. A very curious shrub, which we saw in the Botanic Gardens at Kazan.

G. glabra is not so striking.

HIPPOPHAE.

The grey silky foliage of these shrubs makes them very attractive. "Are they hardy?" I asked Dr. Regel. "I received them from central Europe and they proved tender; I then procured seed from Siberia, botanically the same, and they are quite hardy." Such was Dr. Regel's reply, the same old story, his experience and mine, as far as I may be said to have any.

The *Hippophae salicifolia*, which we saw at Proskau, was much like a rosemary willow, and lacking in that white lustre which others usually have. *Sibirica* is more like the *argentea* of Proskau, bright and very ornamental.

JUGLANS—Walnut.

NOTE.—When at Saratof on the Volga, Mr. Budd and I saw two large trees of the so-called English Walnut (*J. regia*), and let us remember that the winter temperature of Saratof is but one degree milder than the city of Quebec. We examined the trees carefully, and could not have easily been mistaken, as we had watched this same walnut and noted it wherever growing for several weeks, through central Europe, noting its variations in leaf in different places. The nuts which are for sale at all the little provision stalls along the Volga, are much like those shipped to the London market, but are harder in shell and slightly smaller, but whether these are grown on the lower Volga, the Caucasus, or in Persia, I cannot say.

LIGUSTRUM.

Ligustrum foliosum.—The common English privet has not been found hardy in Iowa. The northern species named is equally beautiful, and stands the dry summers and cold winters at Voronesh, Russia. It is more than probable it will do good service as a border plant with us.

LARIX—Larch and Tamarac.

In the Riga nurseries we first saw *Sibirica* and *Europæa* growing side by side. Sibirica much the faster grower in nursery, foliage slightly longer, more fringy, and clothing the branches better than on Europæa. This larch was from the Ural Mountains. Again at the Petrovskoe Academy there is a very fine avenue of Sibirica, a quarter of a mile or half a mile long. The foliage very light in colour; the outline much less sharply conic than other varieties. An avenue of even-sized trees about thirty feet in height. In the Botanic Gardens at St. Petersburg we see it in old age, a

few old trees about seventy feet high. Alongside of it is *L. Dahurica*, of equal size and age, but different in this way, that at a certain height Dahurica usually forms two or more trunks; it is just as ornamental, but on this account not equal as a timber tree. In the far north, on the border of the tundra, Dahurica is a small stunted tree. Many years ago the Duke of Athol had imported larch seed from the forests to the south of Archangel. This proved inferior in growth and in quality of wood, and led us to suppose that there was no larch in the Russian forest equal to Europæa, which is that of central Europe. The Duke of Athol's seed, too, may have been obtained from stunted specimens on the northern limit of its growth.

The *L. Koempheri* of Japan, Mr. Wagner, of Riga, says is not hardy at Berlin.

LONICERA—Honeysuckle.

The following list is given by Mr. Budd:

NOTE.—"*Lonicera orientalis.*—A hardy fine shrub, with large black fruit.

"*Lonicera cerulea.*—Much like the above, but with large dark-blue berries, covered with a rich bloom.

"*Lonicera ruprectiana.*—This has peculiar thick plicated leaves and is ornamental through the season.

"*Lonicera alpigena.*—This has the largest and finest leaves of the family, and the red berries are as large as Morello cherries.

"*Lonicera hispida.*—A new species from Turkestan. It has very narrow leaves, and bears fine crops of showy white flowers.

"*Lonicera xylosteum mollis.*—An upright form of the Chinese honeysuckle, which is very hardy and ornamental.

"*Lonicera Kamschatka.*—A large berried species, popular in all the parks of northern Europe."

If I may I will add from my own notes which are very brief. The first four above named seem quite hardy as growing in the Imperial Botanic Garden at St. Petersburg. *Coerulea* and *orientalis* are from Siberia. *Ruprechtiana* is growing to a height of ten feet. It is from Amur. I saw a specimen of it twelve feet high somewhere, I think at Moscow. *Sorbifolia* is common at St. Petersburg. *Alberti* is from Turkestan, and has foliage like a purpurea willow. *Xylosteum*, noted by Mr. Budd, and which I noted as hardy at St. Petersburg, is growing in bush form to the height of ten or twelve feet in the Botanic Garden at Warsaw. *Kamschatka* is also growing there to the same size. *Maximowiczi* is from Amur. It is said to be quite hardy at St. Petersburg and well worthy of introduction.

MAGNOLIA.

Mr. Maximowitch tells me that the *hypoleuca*, if the seed be procured from Hakodadi, on the Island of Yezo, might be worth trying in rather severe climates. It becomes a large tree, and, I think, has a large blossom. The *M. kobus* is less beautiful, but probably still hardier.

MORUS—Mulberry.

We made many inquiries about the Russian Mulberry, but could hear nothing of it in the colder climates. At Voronesh, in the Botanic Gardens, we saw a variety in leaf much like it, though there not valued. In Odessa there are large mulberry trees, we are told, and in the Botanic Garden in Vienna, we saw not only large trees of *Alba*, but a specimen of *Tartarica*, fourteen inches in diameter of trunk and twenty-five feet high. The Russian mulberry, however, as known in the States, is on extensive trial in the cold climate of Cottonwood county, Minnesota. It has been visited by horticulturists, and we shall soon have opinions upon its probable value.

Mr. Maximowitch suggests that we should try the Mongolian mulberry, if we can manage to get it.

The following note by Mr. Budd gives the status of the case in a few words:

NOTE.—On account of ease of propagation from cuttings, the so-called Russian mulberry has been introduced very suddenly and extensively. Its home is in southern Russia. We first saw it at Voronesh and Orel, where the above noted forms of the horse chestnut are perfectly hardy. The stories told about its value as a timber tree were laughed at by Russian foresters. It is used in Russia as it will be here, as a small-sized ornamental tree, of some value as a fruit producer. It is worthy of trial, but not of the fuss which is made over it by interested parties.

PANAX.

P. sessiliflorum.—A shrub or small tree from Amur, well worth introducing. There is a specimen in the Botanic Gardens, St. Petersburg, about fifteen feet high, and Mr. Maximowitch tells us that it blossoms well there, but does not mature its fruit. It grows in Mantchuria, but not north of lat. 49°.

PHELLODENDRON.

Mr. Goegginger, of Riga, tells us that in the Botanic Garden at Dorpat, half way between Riga and St. Petersburg, there is a tree of this variety eight to twelve inches in diameter of trunk, and twenty-five feet in height. Again, at Orel, in central Russia, we find a young tree about fifteen feet. Clearly hardier varieties than those now grown in United States. The tree I have at Abbotsford is not quite hardy.

NOTE.—Seed might be obtained from Prof. Dr. Russoff, Director Botanic Garden, Dorpat.

POPULUS—Poplar.

The poplar is our most valuable tree where quick shade is needed. Different species abound in varieties; some of the best we have not.

P. alba.—The silver poplar is a tree of very wide habitat; the varieties indigenous in cold, dry regions we have not tried. In the Botanic Garden at Kazan, there is a row of eleven trees, in all in the garden twenty trees, about eighteen inches in diameter of trunk; trunk straight and tapering, the leaf larger than our varieties, and than acerifolia only where making strong growth. The quality of the wood of the white poplar is well known, but the trouble is the difficulty of getting a straight piece from the western European form. On dry soils the white poplar we have, becomes very small in leaf, and looks unhappy, while the varieties we find on the Volga, maintain large acerifolia leaf and good growth on very dry soil, and stand severe drought better than any of the Siberian poplars, better than any other tree we find there except the wild Volga pear. Cuttings from Kazan and other points in eastern Russia should be obtained, for these straight-trunked, drought-resisting, white poplars are very important, both as timber and ornamental trees. In the collection at Verrieres, near Paris, planted by the late M. de Vilmorin, two varieties maintain this straight trunk.

Of the *erect* forms of white poplar, that which we find in the nurseries under the name of *Bolleana*, and said to be from Tashkent and Samarcand, seems the same as that at Busy Institute introduced by Prof. Sargent, and described by me last year as a species from Turkestan; a deeply cut-leaved silver poplar, as erect when young as a Lombardy; a decided acquisition. I am told by those who have been at Astrachan, that the common white poplar along the Volga, from Tsaritsin to Astrachan, is upright like the Lombardy.

Such are the variations in poplar seedlings, that in dealing with them we must consider that we are dealing with approximations. The P. alba and the P. alba nivea in the different botanic gardens of central Europe all differ somewhat.

At Kew there is a grand specimen of alba pendula, three feet in diameter of trunk: a lofty tree of fine weeping form. There is an alba pendula in the catalogues of Riga, and I think Metz, but I have not seen it.

P. monilifera.—This is the most largely planted tree in northern and eastern France, the most common country road-side tree in central Europe. Not only along the road-sides, but, especially in France, along all sorts of imaginary lines across the fields we find it in single rows, with side branches trimmed up and cut as they grow for faggots and even for sheep feeding. Loudon queried as to whether it was introduced from Canada or Virginia. At any rate botanists seem to say it came fro n this continent. This favourite tree, with some variation of form, is our own native cotton-wood; universally planted in the north-western States, valued in Europe, scarcely known and never planted, I may say, in this Province. A most valuable, though an overlooked tree. Its wonderfully rapid growth at Abbotsford has begun to attract notice there.

P. nigra.—At Warsaw some of the roads are lined with grand old trees of what is there known as the *Vistula poplar.* We saw large spreading trees sixty or seventy feet in height, with a leaf much like our cotton-wood, and with bark rough except on limbs less than five or six inches. In the Botanic Gardens at St. Petersburg are two immense trees, one nearly six feet in diameter, now in a state of decay, and said to have been planted by Peter the Great. However, at Riga and other places this tree is not a favourite on account of its tendency to decay or kill back in the tops of the branches, both on dry and moist soil, and as we get into severer climates, trees of this variety are often very unsightly, and thus it is not a favourite as is monilifera.

A very different tree is the Nigra of the Botanic Gardens at Munich. A tall tree of small diameter, not spreading, and with very small leaf. A good healthy tree, unlike others, and worthy of trial. According to the Flora Russica, by Dr. Ledeborn, the Populus nigra is a native of Lithuania, Moscow, Kazan, the Caspian desert, southern Siberia, and the Altai. For some reason the Siberian balsamiferas have been planted instead of it in eastern and middle Russia.

P. Eugenei.—This is a hybrid between fastigiata (or Lombard poplar) and monilifera; so we are told by Messrs. Simon-Louis, at Metz, who have a very large collection of the poplars of central Europe and who seem to have made them a special study.

P. tremula.—Our own aspen is the poorest tree we have, so short lived. The Russian form grows to much larger size, and does not appear to be short lived. In Botanic Garden at Munich there is a high, narrow, small leaved tremula, much like the Munich nigra. A good tree.

ASIATIC POPLARS.

Under this vague heading, for want of a better, I will group a race of poplars hardly known to us; trees better suited to dry, cold climates than those of the monilifera and nigra types, at least one would suppose so from the fact that they are the street and garden trees from Moscow to Kazan, and south to Saratof, and in middle Russia. They do well on dry soils, yet do not maintain anything like the same healthy foliage during extreme drought as the Volga forms of the silver poplar. Neither are they trees of great size, at least not in their native climates. They seem related to our balsamifera or Balm of Gilead, yet have leaves not pubescent but smooth, and whitish on the under side, and in some forms singularly narrow.

P. laurifolia.—This, Mr. Maximowitch tells me, is a medium sized tree, usually thirty or forty feet in height, and one foot in diameter of trunk, as growing on the Altai Mountains. Mr. M. had seldom seen it larger. It is a common street tree in north-eastern Russia. It is a fast grower, has narrow leaves curled very much on their edges, and has angulated branches. A specimen in the Botanic Gardens at St. Petersburg is nearly fifty feet in height, and I understood it to be but twenty-six years planted. It seems to be a faster grower than suavolens.

P. suavolens is a native, says Mr. Maximowitch, of very cold districts in eastern Siberia, also of Kamtschatka and the islands of the coast. It grows to a height of fifty or sixty feet, with a trunk two or three feet in diameter, and is a good street tree. Branches round.

NOTE.—The two above mentioned are botanic species. The following, mostly horticultural varieties named as in the Russian catalogues :—

P. Berolinensis of Dr. Regel and of the Riga nurseries is the *P. Certinensis* of Prof. Sargent, and which has been grown at Busy Institute, Jamaica Plain, Mass., and has thence found its way into some of the U. S. nurserymen's catalogues. I am not a botanist and am at a loss to know whether to class this as a European or Asiatic poplar. It is a very fast grower, and a favourite in the Russian nurseries, but would seem to be a seedling of our own cotton-wood. Leaf just like it but curled on the edges.

Petrovskoe, as received from Chas. H. Wagner, and growing in the college grounds at Ames, Iowa, seems the same.

P. Sibirica is another variety; foliage slightly broader, and Mr. Wagner, of Riga, says it grows to be a good sized tree. This must be the Sibirica pyramidalis of some catalogues, and is, I think, the tree we used so often to see planted in the gardens at the railway stations, and which looked at a distance very like a sweet cherry.

P. Sibirica pyramidalis received by Mr. Budd from Mr. Wagner, of Riga, seems the same as the laurifolia of Mr. Sargent.

P. balsamifera in leaf in nursery is just like the above, but is said to grow into a tree of different form. We saw a specimen of it in the Botanic Garden at Kazan fifty feet in height and two feet diameter.

P. Sibirica suavolens.—A good sized spreading tree, Mr. Goegginger says like a tilia. Said to grow larger than S. pyramidalis.

Of others, *Wobsti*, Mr. Shroeder, at Moscow, says, is a large as well as a good tree, with broad leaf. It is said to be from Turkestan.

NOTE.—This has dark foliage of balsamifera type and brownish red shoots. This seems to be *P. Nolesti* of Busy Institute.

Petrovskoe, Mr. Goegginger says, is a Turkestan variety, growing at Petrovskoe, also a broad-leaved variety. *Nigra horizontalis*, said to be from Tashkent. *Simonii*, an Asiatic variety with red twigs and a close thin leaf the least like the balsameas. *Effratica* or *diversifolia* from Turkestan is a curious variety of irregular foliage; so says Mr. Goegginger of Riga, who has the largest collection of these poplars which we saw. *Tristis* is a variety with dark concave, thick, glossy leaf, which sprang up by chance in the Botanic Garden at St. Petersburg.

These varieties are mostly variations of what Pallas called the Siberian balsamifera. They will not grow to as large size as our own Balsam of Gilead, which here is a lofty tree with a trunk three feet and even four feet in diameter, and which reaches a diameter of six to ten feet on the upper Peace river in the North-West. They are, however, so easy of introduction, so easily scattered, they differ so much in foliage and growth, that they must be looked upon as interesting and valuable introductions.

POTENTILLA.

NOTE.—Pretty little shrubs for the north. *Dahurica* bears white flowers, *fruticosa* yellow.

PRUNUS—Plum.

P. padus aucubaefolia (Variegated-leaved bird cherry). This and other varieties quite hardy in the north.

P. Maakia.—Hardy at St. Petersburg.

P. spinosa.—The dwarf form on the Volga, seldom grows over three feet. I have seen bushes eighteen inches high loaded with bright blue little fruit. Very ornamental.

PYRUS—Apple and Pear.

Some very ornamental trees among the wild forms of the apple and pear.

P. eleagnifolia.—A bright foliaged tree, nearly as white as salicifolia, leaf broader and growth more upright and regular. I do not know that it is a tree of northern habitat, still it is hardy at Proscau. We also saw a good specimen of it eight or ten inches in diameter of trunk at Warsaw.

P. salicifolia.—The most ornamental of the pyrus; of irregular, eccentric growth, somewhat pendulous, and with branches intertwisted in all sorts of ways. The leaf is very narrow, and as white as the regalis willow; a strikingly beautiful tree. It is a native of the Ural Mountains, and therefore should prove hardy.

P. Ussuriensis.—The wild pear of the Ussuri in Mantchuria. I am not sure that I saw it. The tree is said to be quite ornamental, the fruit of fair size, but it does not soften even when cooked.

The wild pear of the Volga and of middle Russia, I must mention as the best tree I know of for a cold climate, for maintaining a dark, glossy leaf during extreme drought.

QUERCUS—Oak.

Tender and unsatisfactory as are some of the English oaks, the *pedunculata* in Russia grows in climates quite as severe as the native oaks of this Province. The foresters tell me that pedunculata is indigenous in the Government of Moscow, also, I am told, in the Government of Kazan. From this latitude southward, wherever the soil is suitable, this oak has been planted in vast quantity by the Government forestry stations. Our red oak is a good, fast grower, but the wood is inferior. Our white oak is the very best of wood, but, I was going to say, it grows; but watch a white oak for a few years, and if you believe your eyes you will declare it does not. This Russian pedunculata combines good growth with a good quality of wood.

I find the *Q. r. fastigiata*, the upright oak, hardy as far north as Riga. *Q. Mongolica*, a variety with a very small indented leaf, is recommended to us for trial in our cold climate.

RHAMNUS—Buckthorn.

R. alpinus.—A variety with an immense leaf, and quite ornamental. At Riga, Mr. Wagner says, hardy but sometimes slightly injured.

R. catharticus.—Hardy at St. Petersburg.

R. Pallasii.—A pretty shrub with very glossy foliage, six feet in height. It seems hardy in the Botanic Garden at Moscow.

RHODODENDRON.

The rhododendrons extend from the Himalayas north, to the Altai, and east to Kamschatka, and are found in some cold regions. *R. dahuricum* is an evergreen variety with purple blossom, quite hardy at St. Petersburg. It does well on limestone soil. *R. parvifolium*, a smaller and more compact shrub with a small blossom; grows well on peat or without it, and is very hardy far to the north.

RIBES—Currant.

R. alpinum.—A fruit and an ornamental shrub. The fruit is of fair size, a rich carmine, quite sweet, but with a very slight bitter, yet nice, and quite productive, it would seem. It is from Siberia. Mr. Shroeder, at the College Gardens at Petrovskoe, seemed to value it highly. In Siberia, not only the currants, but some of the loniceras bear fruit, which is gathered for the table, and yet these same varieties ripened in the climate of St. Petersburg are not eatable.

ROBINIA—Locust.

The pseudo-acacia, or *yellow locust*, next to the monilifera poplar, is the most common tree in northern and eastern France. We find it planted along the railroad cuttings and embankments to bind the earth. We find it a common tree in the streets and parks of Paris. We find it planted to cover waste tracts of land. As we enter Germany we find it a most popular tree in their streets and city gardens.

According to Loudon it was introduced into Europe in 1601 or 1635, and the tree planted at the latter date in the Jardin des Plantes at Paris is still living. A still larger tree, however, is that in the public gardens at Warsaw. This locust has run into endless varieties. The great favourite in central Europe is a top grafted, rounded variety, which, I think, must be the *umbraculifera* or globe acacia. Not quite hardy at Warsaw though grown there. Not likely to prove hardy here.

In Europe this tree does not seem affected by borers, nor does it have the same seedy look when old that it does here. Its wood is most durable and valuable at any age; its growth when young is rampant; it suckers very badly. At Abbotsford we have had no borers, and hence it promises to be the best fence-post and fence-rail tree we have.

ROGERSIA.

This I did not see, but Mr. Maximowitch speaks of it as a pretty shrub, which does well at St. Petersburg. The flower is small, but plentiful.

ROSA—Rose.

I wish to draw special attention to the *Rosa rugosa*, and especially its double form, *flore pleno*, as a shrub perfectly hardy at St. Petersburg and Moscow. In this respect it is pointed out to us as a shrub of unlimited hardiness. It has a pretty double flower, and is a decided acquisition. It is a native of Japan. The *R. villosa pomifera* is so named because it bears a fruit two inches in diameter, and which is good for preserves. It is fairly hardy at Riga. It should be planted where likely to be covered with snow. *R. rubrifolia* is a red foliaged shrub. The flower is not special, but I am glad to know that this plant, which I had admired at Busy Institute, is hardy in the north.

SALIX—Willow.

S. alba var splendens.—In the Botanic Garden at St. Petersburg there is a fine specimen of this bright silvery willow, a tree about fifteen inches in diameter, and thirty-five feet high, without any dead wood about it; a tree of great ornamental beauty in contrast with dark foliaged trees like S. laurifolia. Throughout Russia we find willows more or less of this shade of colour. In France and central Europe many willows have this bright silvery tint. We intended to try the *alba lucophylla* of Messrs. Simon-Louis, at Metz, until we found at St. Petersburg a variety whose hardiness was already tested for us.

S. alba of the Volga.—The first groves of this I saw were on low land on the bank of the Volga, some distance below Nijni Novgorod; lofty trees with straight narrow trunks, growing quite close, and therefore without lower branches. The foliage is quite narrow and feathery, the branches pendulous. Single trees maintain the same straight trunk. At several points on the Volga I asked what variety it was, and was told Salix alba. It is also known as "vertla." How different is the salix alba of western Europe, the great screen, wind-break and snow-break tree of the prairie States. This Volga willow is not suited for these purposes, but is a straight growing timber tree of great height, with feathery foliage.

S. acutifolia.—This is the favourite willow for planting to stay drifting sands. In Mantchuria, in the woods, it is a large tree with a trunk four feet in diameter, used by the natives for canoes. In cold open exposures it is a mere shrub. It is the best weeper among the willows in the Botanic Garden at St. Petersburg.

Of others, *S. Californica*, a small, broad-leaved, very bright silvery little shrub, quite hardy at Proskau, quite hardy, top grafted even, with Mr. Hoser at Warsaw. *S. cuspidata* becomes a large handsome bush. It has a laurel leaf and yellow twigs, quite hardy at St. Petersburg. *S. fragilis* is, I believe, a widely scattered tree in north Europe and Asia. Large canoes are made of it in Amur. Rather ornamental and quite hardy.

SAMBUCUS—Elder.

An ornamental race of plants, most of which are adapted to cold climates.

S. nigra.—We find this as a small or even medium-sized tree in the milder parts of Europe. It has been grown at St. Petersburg, but is tender there. The *S. nigra incisa*, which we saw at Prague and similar climates, is a very dark, yet feathery cut-leaved shrub of great beauty. I think this is the *Nigra laciniata* of the nurseries at Riga, which is fairly hardy there.

S. racemosa.—The red-berried Elder is the favourite shrub in Russia; more widely planted than any other, except the Caragana; more common than the mountain ash, or any other tree bearing ornamental fruit. In the north it bears its clusters of bright red berries in profusion, and decorates the roadsides and gardens, where it is planted. The *S. racemosa serratifolia* is a beautiful cut-leaved variety of it; fairly hardy at Riga, nearly hardy at St. Petersburg. There is also a variety *plumosa*, much like it, and about as hardy at Riga.

SORBUS—Mountain Ash.

As we journeyed from Proskau to Riga, during the first week in August, the Mountain Ash everywhere were full of clusters of bright red berries. This eastern form is not as straight and smooth a grower as the ordinary forms from western Europe, yet this seems to fruit more heavily; but here is the point, it colours its fruit a month earlier.

SPIRÆA.

I will again quote from Mr. Budd :—

NOTE.—We have introduced very few hardy spiræas at the west, and the few fine ones we have tested are not yet common in our nurseries. Yet, with the hope that we will soon have a specialist in this desirable line of nursery work, I will note a few fine species of the spiræa for the central and north part of the State.

Spiræa oppulifolia.—While no better than our native species, it is a special favourite in all parts of Europe. It should be better known with us.

Spiræa Douglasi.—We have a fine spiræa under this name in the eastern nurseries, but the Russian form seems an improvement in plant and in the length and perfection of its purple flower spike.

Spiræa cana.—This has fine graceful foliage much like our Thunbergia. It flowers freely in June and July at the north.

Spiræa nobleana.—This is a fine hardy species with a profusion of scarlet flowers in July at the north.

Spiræa laviegata.—The only spiræa, it is said, which is strictly dioecious. The leaves are very large and the whole expression of the plant peculiar: very hardy.

Spiræa alba.—In the northern steppe gardens this species attracts the attention of all visitors.

Spiræa bella.—Hardy, fine foliage, and a profusion of fine, white flowers.

Spiræa chamædrifolia.—A steppe species, improved probably by crossing. It is popular as an ornamental hedge plant in the north, and even as far south as Austria. It bears pruning, and in June and July it is literally a wall of pure white flowers. It grows readily from cuttings. Of the spiræas, only the specially hardy are noted, as for milder parts of the State we already have a good collection.

To the above list, by Mr. Budd, I would like to add *fruticosa*, a variety noted for its prolonged bloom, which is yellow. It is indigenous in parts of Siberia, Mongolia and Thibet, and would seem suited to dry climates.

These varieties are all so well known by Mr. Maximowitch, that the list specially recommended by him must be given. It is as follows, amurensis, betulifolia, callosa Foxi, cana, carpinifolia, confusa, hypericifolia, lævigata, sorbifolia, and triloba.

SYRINGA—Lilac.

NOTE.—The northern steppes seem the home of the large leaved lilacs of the *Josikæa* race. In the large cities of central Russia, trees fifteen or more feet in height, with fine rounded tops, are everywhere common in public and private places.

TAMARIX—Tamarisk.

This is a beautiful feathery shrub, unlike any other. I was always making enquiries to see if we could not find a really hardy species. The *T. tetranda* is a native of the Altai Mountains, yet needs shelter at St. Petersburg. *Dahurica* is very light in colour, and very feathery. Mr. Goegginger, at Riga, finds it a little hardier than Gallica or tetandra. *Gallica* seems to differ much in hardiness. In the Botanic Garden at Moscow it is said to be seldom covered. In Norway, Germanica grows wild in lat. 70°, about as far north as the sorbus and the trembling poplar.

We cannot grow the tamarisk as a tree, as in the gardens of the Tuilleries, in Paris, but as a shrub, cut back each fall, grown in some corner where the snow is apt to cover it, there should be no trouble in the culture of this beautiful plant.

NOTE.—In my search for a hardy Tamarisk, Mr. John Robinson, of the Arnold Arboretum at Jamaica Plain, Mass., kindly comes to the rescue. He tells me of a T. Chinensis (?) received thirty years ago from an unknown source, and which has never shown any signs of winter injury at Salem, Mass. He even sends me a photograph of the tree, the top branches reaching the sills of the windows of the third storey, and yet the tree has been cut back many times to keep it in shape. Mr. Robinson also speaks of the readiness with which it grows from cuttings.

TILIA—Linden or Basswood.

The Linden is a very favourite street or park tree in central and northern Europe. It has long been a favourite, and hence we find avenues of grand patriarchal trees which have been the pride of generations. At Verrieres there is an avenue planted by the late M. de Vilmorin, trimmed inside in the form of a high narrow Gothic arch, with transcept, a prolonged Westminster Abbey.

T. Europæa.—The linden of western Europe is hardy in Montreal, but its leaf is so fine and thin that it is sensitive to drought, and even in England its foliage is apt to wilt in dry weather. It is a favourite street tree on the Massachusetts coast, yet should not be planted largely in drier regions.

T. Europæa var parvifolia.—As we proceed eastward this becomes the favourite, and finally, in middle and eastern Russia, the only tilia. The first specimen we noticed was at Reutlingen, in Wurtemburg, a largish tree with leaf no larger than an English shilling. It was growing very slowly, the foliage is always larger. At Salzburg, in Austria, the grand old lindens, centuries old, trees four or five feet in diameter of trunk, were all parvifolias. At St. Petersburg the finest street trees are lindens, and I believe most of them parvifolias. Here the ordinary Europæa is known as the tilia of Holland. At Moscow parvifolia is represented in the Botanic Gardens by a tree with a straight trunk over four feet in diameter. In Kazan we are told that the trade in basswood bark from that region is all from this parvifolia variety. Russian foresters view the enormous consumption of basswood bark much as thinking men do here our export hemlock bark trade, and consider it a destructive industry. Soon some other material will have to be found for peasants' shoes, rope and matting.

Of the other varieties, *nigra*, which we saw in the Munich Botanic Gardens, struck me as being a good tree, with dark, glossy leaf. The *vitifolia*, of the American nurseries, has a good leaf, but I did not see it in Europe. So has *dasystyla*. *Grandifolia* and a host of others have foliage too thin for our dry air. *Begoniæfolia* is not variegated enough to be ornamental, not in dry weather. *Aspenifolia* is a great curiosity, leaves torn and slashed irregularly, folded and indented, with scarcely two leaves alike; quite hardy at Proskau; fairly hardy at Riga. This is sometimes noted as *dissecta*.

Of the *white-leaved* lindens, the *American*, which I have noted as a native tree as far north as the Hennepin Islands in Minnesota, is spoken of at Riga as the hardiest tree, and the largest tree. I believe it is rather erect in growth. The *Hungarian*, known there as pannonica (I suppose the tomentosa of Messrs. Simon-Louis) is not as hardy, not as erect in growth, more bright in colour, more ornamental. Further south, at Vienna, in the Botanic Gardens, we find a variety marked heterophylla, of Ohio and

Mississippi, twelve inches in diameter, semi-upright, more bright and white in foliage than the T. argentea of Hungary alongside. The white leaved European lindens we did not see in the very severe climates. The alba of Hungary has not proved hardy with me at Abbotsford, still less so the alba pendula which winter kills at Riga. So we had better try the northern forms of the American white lindens.

ULMUS—Elm.

In Europe they have overlooked the grandest of all American trees, the white elm, a tree that thrives in climates even more severe than St. Petersburg and Moscow.

The *campestris* is not indigenous at St. Petersburg, as I had said, nor is it hardy there, but *effusa* is. In the southern part of the Government of Moscow, both effusa and montana are found wild, but the northern limit of campestris is yet further south. *Effusa* is a good and a hardy tree, but I never saw one of large size. At Petrovskoe, Moscow, Mr. Shroeder showed us a fine specimen of *effusa pendula*, so my notes say, but I have forgotten it. *Montana*, or the so-colled Scotch elm, is not so hardy there or at St. Petersburg. Some weeping forms of it of the camperdown type, seemed quite hardy at Riga, and were very graceful and ornamental. The pendula should rather be named horizontalis. They have a fine specimen in one of their public gardens, eight inches or more in diameter of trunk. Another is quite pendulous. We are much in need of a tree of this kind a littlehardier than camperdown. *U. montana exoniensis* is very erect in growth, has large curled leaves clinging around the stem—both odd and ornamental. *U. m. Damierii* is much like it, but said by Mr. Wagner to be less hardy. *Adantifolia* is like the urticaefolia of the American nurseries, but even more crinkled, and its recurved serrations are very curious. The *U. suborosa* (?) of Turkestan, is a small-leaved variety, not hardy at Moscow. Under the name of Sibirica are several varieties unlike one another, and quite unlike that described by me last year.

VIBURNUM.

I again quote from Mr. Budd:

Note.—Except the snow-ball and high-bush cranberry, we have no species of this numerous northern family under cultivation in the State. The following should be introduced: *Alnifolium*, *Dahuricum*, *dentatum*, *lantanoides*, *macrophyllum*, *lantana flore pleno*, *lantana marginatum*, *lantana minor*, *prunfolium*, *pygmœum*, and *pyrifolium*.

The lantana appeared quite hardy in the Botanic Gardens at Moscow.

EVERGREENS

Abies and Picea—Spruce and Balsam.

Note.—The favourite evergreen in the Riga nurseries is *A. Sibirica*, known also there as *pichta*. A good grower and a balsam with rich, long foliage. I think the seed was said to have been brought from the Ural mountains. Picea pichta is common in the U. S. nurseries, but as I noted three years ago, is quite variable in different nurseries in its length of leaf and beauty. On the grounds of General Greig, the President of the St. Petersburg Horticultural Society, on the shore of the Gulf of Finland, in full view of Cronstadt, there is a specimen about thirty-five feet in height and much richer in foliage than the Norway. In fact it was about the most ornamental in the whole collection. At Kazan and again in the Petrovskoe Park near Moscow, we saw much larger and older trees, trees without any decay of their lower branches, as is apt to be the case with our native balsam, and yet these trees were growing on dry soil.

Of other varieties, *Engelmanni* of the Rocky mountains, a great favourite and always hardy. As Mr. Budd says, we must go to Russia to get a true estimate of its value in our own country. *Nordmanniana*, a fine specimen, thirty feet in height,, in the Botanic Gardens at Warsaw, but not hardy further north. *Pectinata*, said not to be hardy at Moscow, and yet it would seem as though they had obtained their seed from some southern source, as there are trees of it two feet in diameter at Kazan. *Obovata*, a hardy spruce

from the Urals, with foliage like the Norway, a lofty tree with very short branches, and therefore a tree of unusually small diameter compared with its height. I have seen trees which struck me very much, and supposed them to be Obovata or Shrenkiana. *Orientalis*, no hardy varieties of it in the Russian nurseries, those so far tried not hardy.

JUNIPERUS—Juniper.

J. communis.—The common Juniper grows to a good size in Finland. Sections of the wood at the National Exhibition at Moscow were nearly a foot in diameter. We also saw a specimen in Kazan nearly the same size.

J. sabina or *Savin Juniper* is a native northern plant, we saw it in the Botanic Garden at Moscow. General Greig tells us that it is commonly known as the Cossack Juniper.

PINUS—Pine.

P. sylvestris (Scotch and Russian Pine). It was through the kindness of M. Alphonse de Vilmorin that Mr. Budd and myself had an opportunity of studying the variations of the sylvestris pine at Des Barres. In 1822 the late M. de Vilmorin began that series of experiments which has been of such great service to the forestry of Europe, and here I would call special attention to the article "On the Riga Pine" in the U. S. report on Forestry in 1878-79, by Dr. Franklin B. Hough. Mons. de Vilmorin had been struck with the variableness of the sylvestris pine of France from a timber point of view. He therefore planted thirty-two samples of seed, seven of which were from Russia, the others from different parts of Scotland, France and Germany. Every sample of seed is now represented by its row or rows of trees, each having an individuality of its own. In the sylvestris of western Europe we find great variableness; some have ascending branches, others horizontal; some attain to good size, others not; some have trunks almost straight, others wobble, if I may so speak. Of the seven samples of seed received from Russia, two were from Riga, and the others from Smolensk, Vitebsk, Vilna, Tchernigov, and Volhynia. All these trees had ascending branches remarkably straight, trunks with reddish bark, and though these different groups to the eye of a botanist like M. de Vilmorin each had an individuality of its own, yet they all combine those characteristics which make them first-class timber trees. It may be noted that these samples were all from western Russia, for the last two Governments lie to the north-east and north-west of Kiev, and yet for timber purposes they are fair representatives of the pines of European Russia. At the Moscow exhibition there was a collection of the branches, cones, seeds, etc., of the sylvestris pine, from nine different governments of European Russia. A chat with a professor in charge, gave me the impression of the general uniformity of these pines for timber purposes. I also asked from which government he would rather obtain his seed? He replied, if planting at Moscow my preference would be rather in favour of seed from one of the three divisions of the Archangel district, but from which division I do not know. This Russian pine seems to grow nearly as high as our own white pine, but is a tree of smaller diameter of trunk. Among the pines of western Europe one variety growing abundantly between the Loire and the Rhone was especially crooked and stunted in growth and worthless as a timber tree. These trees were pointed out by M. de Vilmorin as heavy seed producers, and hence the seed has been picked in quantity, and no doubt has come to this country in quantity.

The experiments of M. de Vilmorin show clearly the great advantage of the Russian pine, which he says "not only grows more rapidly and to a larger size," but he adds "the timber is more elastic and valuable when mature."

The plantations of M. de Vilmorin are not confined to sylvestris pine. There are five varieties of P. laricio, a faster grower, but of doubtful hardiness here. Of Mugho, eleven varieties; of pines of different species, seventy-six kinds. There are sixteen varieties of spruce. Altogether about 117 varieties of evergreens, and 296 varieties of deciduous trees.

M. de Vilmorin began his experimeets with the Riga pines with the hope of growing on French soil the masts for the French navy. The masts had to be brought from Russia. The French forests could not produce them. But this noble patriotism widened into a yet nobler universality, so that his experiments, now perfected by the lapse of time, are the grandest accumulation of forestry data that the temperate regions have ever seen.

P. Cembra (Var. *Sibirica*).—This is the most ornamental of the pines in the Russian parks, more massive in its foliage than our native white pine. We find fine specimens at Gen. Greig's, and in all the botanic gardens and parks. We were told by the foresters that in the Koloninsky Park not far from

Moscow, there are trees of immense size, 600, or 700 years planted. It is a common tree in the Urals and in Siberia. Its seed and that of the sunflower are sold in all groceries, and are the peanuts of the Russian peasant population.

TAXUS—Yew.

T. baccata.—The common yew of central Europe is scarcely hardy at Warsaw. In the well sheltered Botanic Gardens, it has been injured so much as to be scarcely ornamental. Neither is it at all hardy at Riga. However, Mr. Wagner tells us that there is a northern form found in the woods near Riga, and which I suppose is more or less hardy there.

At Volsk, in the Botanic Garden, there are two large specimens of yew, nearly thirty feet in height, with a number of branches or trunks ascending from the ground, different from anything we had seen elsewhere.

In conclusion, I would say that I have written these notes when pressed with other work, but felt it was necessary that they may appear at once, that whatever is of value to us, should be imported next autumn; for orders of plants from points north and east of Warsaw must be shipped in the fall.

Seeds can be sent from or to Russia in bags under eight ounces. Scions I have sent safely to Warsaw by mail; and scions sent by mail from Riga arrived in fair condition. Letters to central and eastern Russia (Moscow excepted) should be addressed in Russian.

As an amateur, I cannot continue to give up to this work the time I have given in the past. My part has been an endeavour to show our Governments and our horticultural societies what may, what should be done.

Let us carefully watch the work now being carried on by Mr. Budd, at the State Agricultural College at Ames, Iowa—work of the highest value to the cold climates of Canada; that work which made our trip to Russia a necessity, that is, a necessity to fair progress; a trip which enabled me in part to see with his eyes, and give you in some degree the results of his study and observations.

Let us then follow out this scheme of interchange with our corresponding climates in the old world. The work has some difficulties. However, as we have the north-western States and the Russians as our allies, the difficulties may be overcome to our great and mutual good.

INSECTS INJURIOUS TO THE WHITE PINE—

Pinus strobus.

By Wm. Saunders, London, Ontario.

More than one hundred species of insects have been enumerated as destructive to the white pine, some attacking the wood, others the bark, twigs or leaves, and while some of them do comparatively little harm, others are very injurious. In the present paper reference will be made mainly to those which do the greatest injury to this our most valuable timber tree, briefly sketching their life history, and habits as far as they are known. The losses occasioned by the destructive work of borers are unfortunately too well known to those engaged in the lumber trade, although the sufferers in most instances know but little of the curious transformations which these insects undergo. These specially destructive species inflict their greatest injuries during the larval period of their existence, in which condition some of them continue their work for several years before reaching maturity. Most of these pests belong to one of two families of beetles, the longicorn, or long-horned beetles (*Cerambycidæ*), or the serricorn, or saw-horn beetles (*Buprestidæ*). The cylindrical bark-beetles are also injurious, but as they operate chiefly near the surface, immediately under the bark, they do not injure the timber to any material extent.

Monohammus Confusor.

Among the most formidable enemies in the family of long-horned beetles are two species belonging to the genus *Monohammus*, and known as *Monohammus confusor* and *M. scutellatus*. *M. confusor* is a large grey beetle, remarkable for the extraordinary length of its antennæ or horns. This insect is shown in fig. 19. The body varies in length from an inch to an inch and a-half, the average size being over an inch. Its general colour is ashen grey, mottled with darker spots and dots; there are also patches of a whitish colour on the head, thorax and abdomen, which are sometimes indistinct or almost wanting, the colours being chiefly due to a covering of very fine, short hairs, which, as they are easily rubbed off, occasion these variations in the appearance of the insect. The antennæ of the males vary in length from two to upwards of three inches; those of the female are much shorter, and seldom exceed the length of the body. During the summer the female lays her eggs in the crevices of the bark of the white pine trees, frequently selecting those which have been scorched by fire or felled by the wind or the lumberman's axe.

Fig. 19.

The larva when hatched soon eats its way into the wood, where it forms channels or galleries through and through the solid interior. When full grown it is a large, soft, white grub, nearly cylindrical in form and destitute of feet. The head is large, of a reddish-brown colour, and is armed with a pair of powerful jaws; the next joint behind the head is flat and horny, and larger than the others, the body tapering a little from this point backwards. The chrysalis state is passed within the burrow, and the beetle appears late in June or during the month of July. As this insect lives a long time in the larval state, the beetle is often developed after the timber has been built into a house, when, suddenly emerging from its concealment, it becomes a source of wonder to the inhabitants of the dwelling. When burrowing into the wood, the larva makes a noise not unlike the boring of an augur, which on a still night may be heard in the woods for a considerable distance, and such noises occurring in a house where the cause has not been suspected has often given rise to superstitious notions and excited in the timid much alarm. This beetle is very generally distributed throughout the Northern United States and Canada, and in the lumbering districts is sometimes excessively abundant. One instance is on record where nearly three hundred of the beetles were seen at one time on a single pine tree. As these insects are partial to cut timber, they often greatly injure logs which are allowed to remain a season over in the mill-yard.

Monohammus Scutellatus.

This beetle derives its specific name from its white scutellum situated at the junction of the wing-covers with the thorax. It varies in length from three-quarters of an inch to an inch, and usually occurs most abundantly in June. In fig. 20 we have a very good representation of this insect. The body is black above and below, and thickly pitted with irregular impressions. On the wing-cases there are a number of scattered whitish spots of various shapes and sizes, which, when examined with a magnifying lens, are found to be formed of dense clumps of short, whitish hairs, which often disappear by being rubbed off. On each side of the thorax is a thick, triangular spine; the antennæ are many-jointed, and in the female are about the same length as the body, while in the male they are nearly twice that length.

Fig. 20.

The larva of this insect is also a thick, white grub, without feet. The body is divided into a number of well-marked segments, the head as in the species last described being furnished with a strong pair of jaws. This larva infests the white pine chiefly after the lumber has been cut or newly fallen, and injures it by boring large, oval-shaped cavities, which extend for long distances through the interior of the log. In some localities these insects are very plentiful, literally swarming on pine trees, They are common in the lumbering regions of Canada and the Northern States.

Criocephalus Agrestis.

Another injurious beetle belonging to the same family, but having much shorter horns, is known under the name of *Criocephalus agrestis*. This beetle is of a blackish-brown colour, with three large irregular indentations on the top of the thorax and two ridges on each of the wing-covers. The antennæ are about half the length of the body. The eggs of this insect are laid on the pine trees, and the larva when hatched bores into the wood, perforating the trunk in all directions, making a flattened cylindrical hole. When full-grown it is about an inch long, is white, footless, with a brown head. The anterior portion of the body is somewhat thicker than the hinder segments. The larva changes to a chrysalis within its burrow, and produces the beetle late in May or early in June.

The Lesser Orthosoma—*Orthosoma brunneum.*

This is a long-horned beetle of a rather flattened form, about an inch and a-quarter long and about one-third of an inch broad—see fig. 21. It is of a deep red colour, darker anteriorly; on each side of the thorax there are three sharp teeth and several slightly elevated lines on the wing-covers. The larva is about an inch and a-quarter long, cylindrical in form, and of a whitish colour. The beetles are very common during the months of June and July, and the larvæ are frequently met with in decaying pine stumps. Since they feed chiefly on decaying wood they do but little harm.

Fig. 21.

There are several other smaller species of longicorn beetles which injure pine trees, but as their habits are very similar to those of the larger species to which reference has been made, it will perhaps be unnecessary to speak further of them now.

The Virginian Buprestis—*Chalcophora virginiensis.*

Among the Buprestidæ, or saw-horn beetles, the Virginian buprestis (*Chalcophora virginiensis*) will first claim attention. This is a large and handsome beetle, which measures from eight-tenths of an inch to an inch or more in length. It is of an oblong form, and brassy or copper-coloured, sometimes almost black. The upper side of the body is roughly punctated, the top of the head deeply indented, on the thorax there are three elevated and polished thick black lines, and on each wing-cover two small, square, impressed spots, a long, elevated, smooth, black line near the outer margin and another near the inner margin, with several thinner, shorter lines between them. The under side of the body has a coppery lustre, and is sparingly covered with short whitish down. It appears towards the end of May, throughout June, and occasionally later. The larva is a flat-headed white grub, with its anterior segments very much enlarged, which bores into the sap-wood of the white pine, and sometimes girdles the tree; its track begins as a narrow shallow groove on the surface of the wood, increasing in breadth as the larva grows, following an irregular course, and terminating in a large hole, at which point the grub changes to a chrysalis.

The Liberated Buprestis—*Chalcophora liberta.*

This is a closely allied species, much resembling the Virginian buprestis in all its stages. The beetle is about three-quarters of an inch long, of a brassy or coppery hue, sometimes glossed with green, in other specimens nearly black. The thorax and wing-covers are deeply furrowed by irregular longitudinal depressions. It differs from *Virginiensis* in the width and character of the raised lines on the wing-covers.

Dicerca Tenebrosa.

Is another member of the family of Buprestians which is an enemy of the white pine. This species in the larval state mines under the bark of the tree, where it occurs as a medium-sized whitish grub, with a flat head, brown jaws, and enlarged anterior segments. The beetle occurs late in the summer, is of an ashy-bronze colour, with the thorax and elytra more or less furrowed, and densely pitted. The under surface is copper coloured. This insect is found in most parts of Canada and the Northern United States.

The Golden Buprestis—*Buprestis striata.*

This species also deserves mention here. It is a very handsome beetle, from six to seven-tenths of an inch long, of a coppery-red colour, with a broad bluish-green stripe on each wing-cover, which varies in brilliancy in different specimens. There are four raised smooth lines on each wing-case, and a wide, shallow groove along the middle of

the thorax. Both thorax and wing-covers are pitted with minute dots. The larva of this species, which is very similar to that of *tenebrosa*, is occasionally found in sound pine logs, but much more frequently in decayings logs and stumps.

Harris' Buprestis—*Chrysobothris Harrisii.*

This lovely little beetle measures about one-third of an inch in length. The female is of a beautiful metallic green all over; the male has the legs and the sides of the thorax of a reddish-bronze, with a purplish tinge towards the tips of the wing-covers. The thorax has a conspicuous furrow down the centre, and is marked with some irregular indentations, which are repeated also on the finely-punctured elytra. The beetle is found on white pine saplings towards the end of May and in June; the larva lives under the bark of young trees and in the smaller limbs of older trees.

Cylindrical Pine Borers.

Eight species of cylindrical bark beetles belonging to the family *Scolytidæ* are known to attack the white pine, of which perhaps the boring Hylurgus (*Hylurgus terebrans*) is one of the most common, and since they are all very similar in their appearance and habits, this may be taken as a representative species. The beetle is about a quarter of an inch long, of a nearly cylindrical form, a chestnut-red colour, and is thinly clothed with yellowish hairs. It is found in abundance in May in pine forests and amongst lumber in mill-yards and elsewhere throughout the greater portion of North America. The larva is a small, yellowish-white, footless grub, with a yellow, horny head, which bores winding passages in many directions in the inner layers of the bark of the tree, and also in the outer surface of the wood.

Xyleborus xylographicus (fig. 22) is another member of this family, which has proved to be a formidable enemy both to the white pine in the north and to the yellow pine in the south.

Fig. 22.

The Pales Weevil—*Hylobius pales.*

Among the weevils, or snout beetles, there are also several species which injure the white pine, one of them is known as the pales weevil (*Hylobius pales*). It is a dark chestnut-coloured or black weevil, from three to four-tenths of an inch long, sprinkled with dots more or less bright, which are found, on magnifying them, to be clusters of very fine, short, yellowish-gray hairs. These insects are quite common in May and June among pine trees, and lumber piles. The female perforates the bark of the tree with her snout and in the excavation deposits an egg, where it shortly hatches into a white or yellowish-white larva, which burrows beneath the bark, consuming its substance and loosening it from the wood. In the autumn the larva bores into the sap-wood, forming a cell nearly a quarter of an inch deep, arched over the top with a roof of sawdust and woody fibre. Within this enclosure the larva changes before spring to a pupa, from which the beetle escapes early in the summer. It is found from Maine and Lake Superior to Florida.

The White Pine Weevil—*Pissodes strobi.*

This is a common weevil met with at all times during the season, but most commonly in May. They affect the upper shoots of the trees, depositing their eggs in the bark of those which are young and growing thriftily. When hatched the young larvæ devour the wood and pith, causing the shoots to wither and die. The leading shoots being destroyed, the trees become irregular in their growth and much disfigured. The larva is white, and about one-third of an inch long. The beetle (see fig. 23) is of an oblong, oval form, rather narrow, about a quarter of an inch long, of a dull dark brown colour, with two dots on the thorax, and a short, irregular, white band behind the middle of the wing-covers. They are also ornamented with a few patches of tawny yellow.

Fig. 23.

The Woolly Bark Louse of the Pine.

This is an insect which, in some localities, is very destructive to the white pine. Large patches are frequently found on the trunk and branches covered with a white, cottony secretion, under the protection of which live myriads of tiny lice. These puncture the bark with their sharp beaks and feed upon the sap, thus exhausting the trees, and sometimes causing their death. Large numbers of these lice are destroyed by lady-birds, who feed on them both in the larval and perfect state. Two species are especially useful in this instance. One is shown in fig. 24, where it is represented in its three stages. This is known as the painted lady-bird (*Harmonia picta*); the other is black, with two red spots, and is called the twice-stabbed lady-bird (*Chilochorus bivulnerus*). The larva is shown in fig. 25.

Fig. 24.

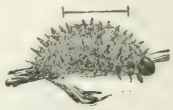


Fig. 25.

Pine Leaf Scale Insect—*Chronaspis pinifoliæ.*

Another allied species is the pine-leaf scale insect (*Chionaspis pinifoliæ*, Fitch). The leaves of the pine are sometimes found to be covered with innumerable elongate, snowy-white bodies, which, on examination, are found to be the scales of an insect; these when abundant give to the whole foliage a whitened appearance, and, if the insects are allowed to pursue their course unchecked, the leaves shortly become yellow or brown, and the trees languish and occasionally die. In fig. 26 is shown a tuft of leaves injured

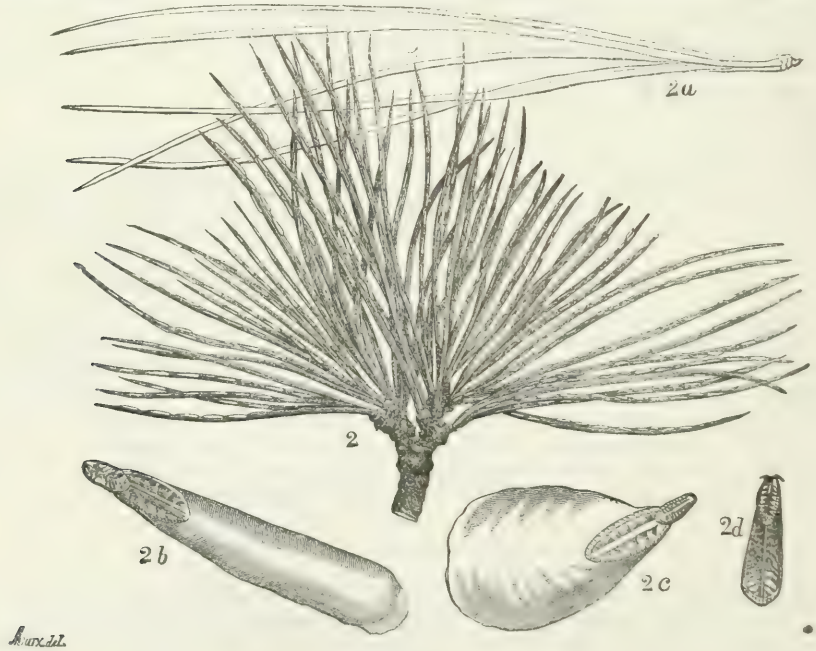


Fig. 26.

by this scale insect. The scale of the female, shown at 2*c*, is about one-tenth of an inch long, that of the male, shown partly grown at 2*d* and mature at 2*b*, is not more than one-thirtieth of an inch. Both male and female scales are much magnified in the figure. This insect has not yet proved troublesome in forests, but has chiefly affected trees in cultivation. It very closely resembles a species found on cultivated pines in Europe, and may possibly prove to be the same. The eggs are produced under the female

scales, from fifteen to thirty under each scale; they are oval in form and of a red colour. The larvæ hatch early in May, and are also red. When first hatched the young females move briskly about until they have selected suitable locations for a permanent abode, when they attach themselves thereto and remain fixed. The males are less active, and often attach themselves to the leaves in the immediate neighbourhood of the parent scales. This insect produces at least two broods in a year, perhaps more, and is found throughout the United States from New York to Florida.

The White Pine Saw-Fly—*Lophyrus Abbotii.*

This species belongs to the family of saw-flies, a class of insects which are said to have greatly injured whole forests of pine in Germany. This American saw-fly is abundant in Indiana, Illinois, and Missouri, and is generally distributed elsewhere through the Northern and Western States and Canada. Fig. 27 represents the insect in its several stages. The larva is from eight-tenths of an inch to an inch in length, of a dingy white colour, with a black head, and several longitudinal rows of black spots along the body, and is found most numerous in the autumn. When full fed they enclose themselves in oval cocoons, which are sometimes spun up among the leaves on the tree, but more frequently among the fallen leaves and other debris on the ground. Within the cocoons the larvæ remain unchanged until the following spring, when the pupa is formed, from which the flies issue in about two weeks The male measures, when its wings are spread, about half an inch the female two-thirds of an inch across. The body of the male is black excepting the under side and tip of the abdomen, which are yellowish. The female is of a honey-yellow colour, with the head and thorax a little darker, the thorax with the abdomen being slightly marked with black. The wings are transparent, with black veins. The larvæ feed in flocks, and seldom leave a twig or branch until they have completely stripped it. When approaching full growth they consume a large quantity of food, and strip a tree of its leaves with wonderful rapidity. When disturbed they have the habit of throwing back the head and ninder part of the body, and if the tree or branch is violently shaken many of them will fall to the ground. A large proportion of these larvæ are destroyed by a parasitic fly.

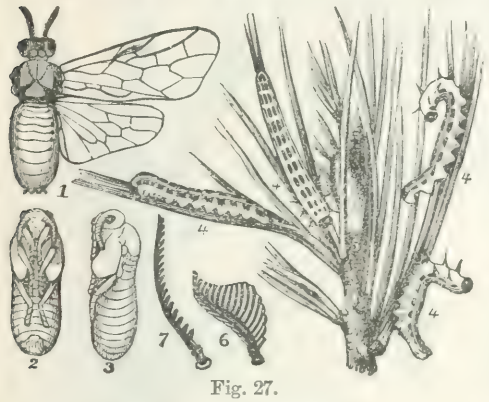


Fig. 27.

The Pine-boring Pyralid—*Nephopteryx Zimmermani.*

In the months of June and July branches of the white pine often show that they are suffering from the attacks of an insect by the pitch which exudes; the wounds usually occur below the insertion of the smaller branches near the top of the terminal shoots. On cutting into the affected part, the injury is found to be caused by a small larva which, when full grown, is nearly three-quarters of an inch long. The head is shiny-brown, with black mandibles, the body blackish-green, naked, with a few black dots on each segment, from each of which arises a single rather stout hair. The larva devours the inner side of the bark, and making furrows in the wood, causes the exudation which, when excessive and continuous, especially in the case of young trees, sometimes proves fatal. In July the larva spins a thin, whitish, papery cocoon in the mass of exuding pitch, which seems to act as a protection to both larva and chrysalis. The chrysalis is smooth, and of a blackish-brown colour, and produces the moth in from ten to fourteen days. The moth, when its wings are expanded, measures an inch or more across. It is of a blackish-grey shaded with reddish, the hind wings are pale yellowish-white, and the abdomen greenish ringed with dull white. The species is probably single-

brooded. From the fact that the exuding pitch offers so much protection to the insect, it is scarcely likely that any remedy would reach it. The knife seems to be the only resource. A small four-winged parasite attacks the borer in the larval state, the chrysalis being often found filled with the cocoons of this useful friend.

Comstock's Retinia—*Retinia Comstockiana*, Fernald.

This insect as yet has only been observed on the pitch pine (*Pinus rigida*), but as it is probable that it will sooner or later be found to attack the white pine it will be briefly noticed.

The perfect insect is a small moth of a light grey colour, varied with darker shades of rusty brown, which measures, when its wings are spread, nearly three-quarters of an inch across. The eggs are laid on the terminal shoots of the trees, and the larvæ are found in the early part of the summer boring into the twigs and small branches, causing an exudation of resin, and sometimes girdling them. The larvæ, when full-grown, are nearly half an inch long, of a yellowish colour, with a brown head, a patch of the same colour on the next segment, and a few polished brown dots on each ring, and from every one of these there arises a single hair. The larva changes to a chrysalis within the burrow from which eventually the moth escapes. In fig. 28 we have the insect represented in its several stages, also a small branch of an affected tree and a section of one of the bored twigs.

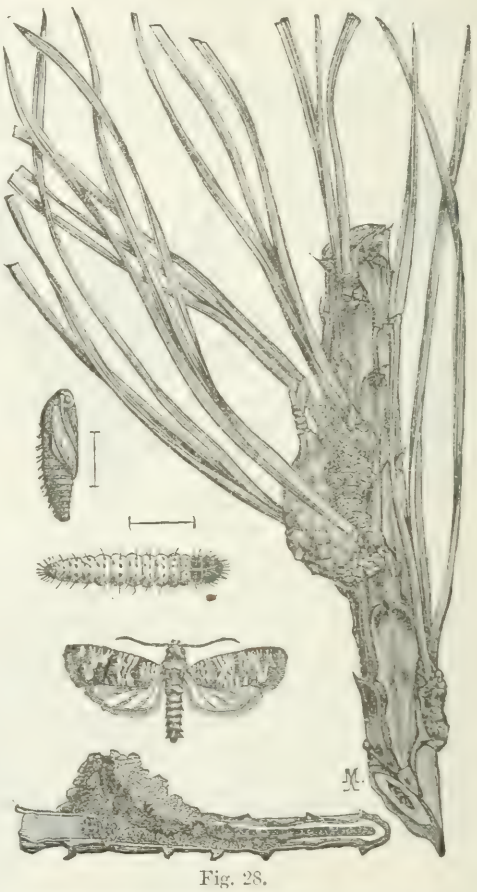


Fig. 28.

The Pine Leaf-miner—*Gelechia pinifoliella* (Comstock).

This insect was first described by Prof. Comstock in his report to the Department of Agriculture, Washington, for the year 1879. It has been found mining the leaves of different species of pine in many parts of the United States, and although as yet unrecorded in Canada, will very probably be found here. The larva is very minute, in the figure it is much magnified; the line below indicates the natural size. It lives within the leaf on the soft tissues, and its presence is soon indicated by the change in colour which takes place in the part affected: it becomes brown, and on examining the leaf, or that portion of it which is discoloured, it is found to be entirely eaten out, and to contain, if in season, the insect, either in the larval or pupal condition. In fig. 29 the work of this tiny insect on the leaves is shown. The moth, chrysalis, and larvæ are all represented, but much magnified.

The larva, when full-grown, is about one-fifth of an inch long, of a pale brown colour, with a black head and a black patch on the upper part of the next segment. It is also sparingly covered with short, fine hairs. The change to a chrysalis takes place within the mined leaf, and in summer the moth escapes in about a fortnight.

The perfect insect, when its wings are spread, measures about three-eighths of an inch across; it is of a brownish-yellow colour, dotted with fuscous scales. The fore-wings are crossed by three white lines, as shown in the figure; the hind-wings are pale grey,

and both pairs are deeply-fringed. There are two or three broods of this insect during the year.

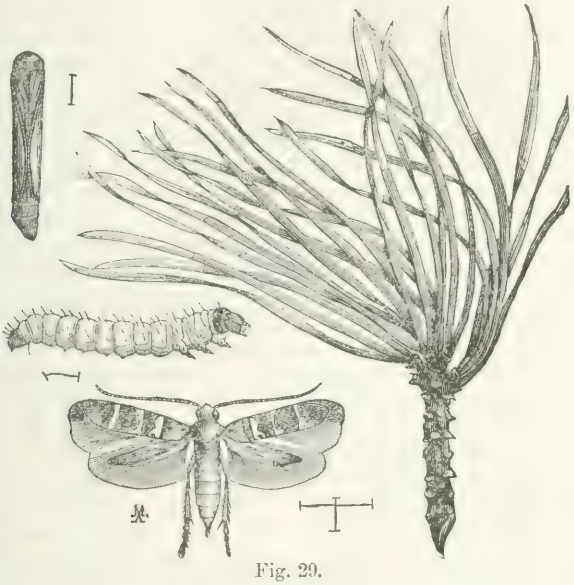


Fig. 29.

In addition to those enumerated, there are a score or two of species of insects which are known to devour the leaves of the pine, in some instances injuring them very much. Unfortunately it does not yet seem to be within the power of man to do much directly towards limiting the destructive work of these enemies to our forests, yet this should not deter us from studying their habits and life history, as a knowledge of these may help us much more than we anticipate. A few trees, such as a belt or group planted for shelter or ornament, may be protected from the leaf-destroyers by syringing them with a mixture of Paris green and water, in the proportion of a teaspoonful of the poison to a pailful of water. Bark lice may be killed by the use of alkaline washes applied with a brush or broom; such alkaline applications are also of use in preventing the borers from obtaining a lodgement in the trees, as these insects will not usually deposit their eggs on trees so protected; but it is scarcely possible that such remedies can ever be applied over extensive areas of forest. It is gratifying to know that in addition to the number devoured by insectivorous birds, almost every injurious species is preyed on by predaceous and parasitic insects, which seek out and destroy the pests with ceaseless diligence. Were it not for these friendly species, the destructive insects would long ere this have rendered the growth of trees an impossibility.

THE CHINCH BUG—*Micropus leucopterus.* Say.

By Wm. Saunders, London, Ont.

This formidable insect pest has recently appeared in force in the adjoining State of New York, where it has within a limited area inflicted a very considerable amount of damage. That an insect so enormously destructive as this one is in the west, has domiciled itself so near us is sufficient to excite some alarm and induce our agriculturists to be on the alert and to use such defensive measures, in case of attack, as the science of economic entomology has suggested.

During the last week in September a package of insects was forwarded to the New York State Entomologist, with the following statement in regard to them, from Mr. M. H. Smith, of Redwood, Jefferson county, N.Y.: "I herewith transmit specimens of (to us)

a new and formidable grass-destroying insect, together with portions of grass destroyed by them, and also some of the soil, for the purpose of examination. If the insect is known to you, and there is any known way to exterminate it, please inform us at once. The evidence of its destructive work was first discovered in June of 1882, by Mr. H. C. King, of Hammond, St. Lawrence county. At haying time, about the middle of July, he noticed about three acres of his timothy grass to be apparently prematurely ripened. In the fall he observed that there was no aftergrowth, and that the stubble was as dead as if it had been boiled. Search was made among the dead roots without any discovery. The following spring the field was entirely barren of timothy, but some clover seeds and thistles occupied the ground where at least one and one-half tons of timothy to the acre, under favourable circumstances, would have been cut. In June of 1883, Mr. King discovered other fields to be affected in the same manner, and instituted a search which has recently resulted in the discovery of myriads of the insect, not in the dead grass, but at the edge of the live grass, where they may be scraped up by handfuls. They have destroyed about fifteen acres for Mr. King, and several acres for each of several other farmers of his vicinity. They are causing extreme alarm, and if you can give any relief from this calamity it will be gratefully appreciated. This is an important grazing locality. In addition to the timothy, June grass and wire grass are also destroyed."

On examination this insect proved to be the notorious chinch-bug, a pest hitherto extremely rare in New York State, and never before recorded as destructive within that State. Prof. Lintner at once visited the district referred to, and thus records his personal observations made during the 5th and 6th of October. He says : "The cold weather of the past few days (ice was formed upon three nights), has doubtless driven most of the bugs to their winter quarters for hibernation, in crevices, beneath boards, rails, etc., in rubbish heaps, and to many other secure retreats, where such insects are accustomed to hide. Yet, upon parting the roots of the timothy, upon the borders of the killed portion, they were found in alarming numbers—in some spots sufficient to cover the ground with their bodies over an area of a couple of inches in diameter, being apparently congregated in such places. In one spot, upon the warm sloping side of a dead furrow, they could be seen, in numbers, running like ants over the ground. Elsewhere, they were concealed among the roots, near to and about the bulbs, upon which they appeared mainly to feed. Their presence in any spot could always be detected by bringing the nose near the ground by their peculiar bed-bug odour. This method of detection proved more convenient, and infallible than looking for them.

"The invasion is more extended than was at first supposed. Nearly all of the farms in the neighbourhood of Mr. King have been attacked, either last year or this, and discoveries of attack not before suspected, are, upon examination, being made daily. A present range of about eight miles is indicated. It is believed to occur throughout most of the town of Hammond, and to extend into Alexandria.

"Without any desire to play the role of an alarmist, I feel it my duty to say that, as the result of my observations, this chinch-bug invasion of northern New York threatens to be the most serious insect attack to which our State has ever been subjected. The following are my reasons for this belief:—

"It has planted itself, maintained a footing and has shown a rapid increase under unfavouring, unpropitious and unnatural conditions, such as these :

"First.—It is regarded as a southern insect (extending further northward, as do most animal forms, in the Mississippi valley), yet it has appeared in the most northern county of the State, and upon (if the report be reliable) the St. Lawrence river.

"Second.—Its attack has been made upon timothy. This seems to be its most unusual food plant, and therefore, we infer, the least suited to it. All previous accounts concur in giving it a preference for spring wheat above all things else ; next in order, oats or corn, and last the grasses. Timothy is only mentioned as occasionally attacked by it.

"Third.—In all previous accounts, great prominence has been given to its being a hot and dry weather insect, dependent upon these conditions, not only for its multiplication, but for its existence. Heavy rains have been claimed to be invariably fatal to it. It could not abound, it is stated, in a wet season. Dr. Fitch had even made recommendation

of sprinkling it with water (an artificial shower), as the best means for its extermination. In the present instance, the bug obstinately persists in multiplying, contrary to all rule. The past year and the present have both been years of excessive rainfall in St. Lawrence county. Spring, summer and autumn have been exceptionally wet. In the spring, I am told that heavy and continued rains flooded meadows now showing the chinch-bug attack. At haying time, when the bugs were young, and, according to all the statements hitherto made, readily killed by wet, the rains were so frequent and severe, that the grass cut could only be secured with difficulty. Upon Mr. King's farm, much of it was drawn in, upon favourable days, by improving the opportunity of extending the labour into hours after nightfall. At the present time grass is lying in fields in stacks, which could not be gathered, owing to continued rain, and fields of oats are still unharvested."

This insect belongs to the order Hemiptera, which includes all true bugs. These are all furnished with a sharp proboscis or beak by which the substance they feed on is pierced and its juices extracted by suction. This piercer when the insect is at rest is bent beneath the body. The chinch-bug belongs to a sub-division of the hemiptera known as the half-wing bugs (Heteroptera), and to this same group the well-known bed pest belongs, and they both give off the same disagreeable odour when touched.

The accompanying figures will aid in making clear the life history of this species.

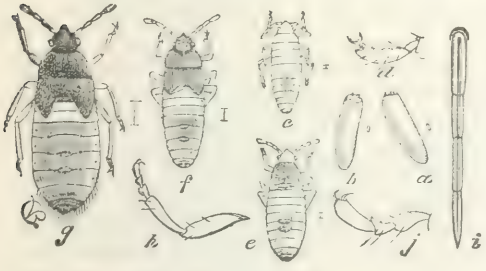


Fig. 30.

At *a* and *b* (Figure 30) the eggs are shown much magnified, the short lines at the side of all these figures indicate their natural size. These eggs are about one thirty-third of an inch long, of a long oval form with the top squarely cut off. When at first laid they are pale in colour and semi-transparent, but shortly they change to an amber shade and finally in part to red as they approach maturity. The newly hatched larva shown at *c* in the figure is pale yellow, with an orange-coloured patch on the abdomen; very soon the whole body becomes red, except the first two joints of the abdomen which remain yellowish. With the growth of the insect the red colour becomes quite bright and contrasts strongly with the pale band as shown at *e* and in a more marked manner at *f*. As the insect approaches full growth the head and thorax become dusky in colour, and the abdomen of a duller shade of red. At *g* the pupa is represented, in which stage the insect loses none of its activity but gradually becomes duller and darker in colour. At *h* one of the legs of the insect is shown enlarged and at *j* the tip of the same still more highly magnified, while at *i* the jointed proboscis or beak is represented.

In figure 31 we have a view of the perfect insect, also magnified, the short line behind it showing its natural size. It is about one-tenth of an inch long and about one-third of its length broad. In colour it is black, and when examined with a magnifying lens the body is seen to be slightly hairy. The wing covers, which lie flat upon its back, are white with black veins and a black spot on each side about the middle and towards the outer margin. The feet and the outer swollen joints of the antennæ are yellow, the legs and the basal joints of the antennæ black.

Fig. 31.

Its size seems to be quite out of proportion to its destructive powers, and minute though it be it nevertheless inflicts an almost incredible amount of injury in certain years upon the grain and corn crops. Prof. Lintner states that "In 1864, its injuries in the State of Illinois to wheat and corn alone were computed at seventy-three millions of dollars. This was a year of unusual excess, but it is not of rare occurrence that a State should suffer a loss of from twelve to fifteen millions of dollars in a single year. When the

insect abounds, it is so numerous as to cover the ground; it blackens the stalks of the plants upon which it feeds; it fills the air when, at seasons of its mating, it takes wing for flight; it marches to new feeding grounds in solid bodies, upon and over one another; its invading armies sweep over and utterly destroy a wheat or corn field in two or three days; and the nauseous bed-bug odour which they exhale sickens those who are compelled to breathe it.

"As the past history of the insect has shown that parasites and other enemies have entirely failed to arrest its multiplication, we are compelled to believe, from present indications, that it has come to stay, and that it will do so, unless effectual means are taken to prevent it. Its capability of increase is wonderful. Under the most conservative circumstances, a single chinch-bug, depositing its eggs about the 1st of June, would be, in the following August, the progenitor of a quarter of a million."

It is evidently most important that every practicable means should be employed in the endeavour to arrest as far as possible the progress of this mischievous foe, and to destroy it wherever found. Should it continue to increase, since it is already upon our borders, it will in all probability establish itself in force in the adjacent districts in Ontario, if indeed it has not done so already, and it may become to us a more formidable enemy than the wheat midge.

REMEDIES.

Where the insects are found among the roots of timothy, it is recommended to plough them under by turning over a flat (not overlapping) broad furrow as deep as possible, but not less than eight inches. It is said that the insect cannot survive this deep burial. Fire will certainly destroy it, and where the conditions of the grass will admit of burning, this measure should be resorted to; a thin covering of straw would prove a material aid in the burning. Where neither of these remedies can be applied the field should be heavily rolled as early in the spring as possible, for the purpose of preventing the bugs which have hibernated, from gaining easy access to the roots of the grass or grain on which to deposit their eggs. The use of common kerosine or coal oil has also been recommended, made into an emulsion by forcibly agitating it for a considerable time with an equal measure of milk, either sweet or sour, when it will become thick almost like butter, which, diluted with water, should be sprayed over the ground by means of a suitable pump; or the oil may be emulsified by agitating it thoroughly with a larger quantity of soapsuds and applied in the same manner.

SIXTEENTH ANNUAL REPORT

OF THE

INSPECTOR OF PRISONS AND PUBLIC CHARITIES

UPON THE

COMMON GAOLS,

PRISONS AND REFORMATORIES

OF THE

PROVINCE OF ONTARIO.

BEING FOR THE YEAR ENDING 30TH SEPTEMBER,

1883.

Printed by Order of the Legislative Assembly.

Toronto:
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1884.

OFFICE OF THE
INSPECTOR OF PRISONS AND PUBLIC CHARITIES, ONTARIO,
PARLIAMENT BUILDINGS, TORONTO, 31st December, 1883.

SIR,—I have the honour to transmit herewith, to be presented to His Honour, the Lieutenant-Governor, the Sixteenth Annual Report upon the Common Gaols, Prisons and Reformatories of the Province of Ontario, being for the official year ending on the 30th September, 1883.

I have the honour to be,

Sir,

Your most obedient servant,

R. CHRISTIE,

Inspector.

The Honourable
ARTHUR STURGIS HARDY, Q.C., M.P.P.,
Secretary for the Province of Ontario,
Toronto.

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COMMON GAOLS, PRISONS AND REFORMATORIES.

SIXTEENTH

ANNUAL REPORT

OF THE

Inspector of Prisons and Public Charities

FOR THE

PROVINCE OF ONTARIO.

PARLIAMENT BUILDINGS,
Toronto, November, 1883.

To the Honourable JOHN BEVERLEY ROBINSON, *Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:—

Herewith I beg to submit the Sixteenth Annual Report upon the Common Gaols, Prisons and Reformatories of the Province of Ontario, being for the official year ending 30th September, 1883:—

I have the honour to be,

Your Honour's most obedient servant,

R. CHRISTIE,
Inspector.

COMMON GAOLS.

I regret to have to again report an increase in the total number of persons committed to the Common Gaols of the Province during the year which closed on the 30th September, as compared with the preceding twelve months; but while there is an increase in the aggregate, it is with satisfaction I can state, that there is a marked decrease in the number of adult women committed, and also of young boys and girls, the increase being confined to adult males. The subjoined table gives the commitments under these four heads from the 1st October, 1868, to the 30th September, 1883:—

	Men over 16 years of age.	Boys under 16 years of age.	Women over 16 years of age.	Girls under 16 years of age.	Total.
Commitments for the year ending 30th Sept, 1869	3,599	294	1,680	82	5,655
" " " 1870	4,215	319	1,737	108	6,379
" " " 1871	4,586	329	1,642	58	6,615
" " " 1872	5,006	281	1,615	56	6,958
" " " 1873	5,745	323	1,735	74	7,877
" " " 1874	7,298	377	1,746	67	9,488
" " " 1875	8,048	389	1,566	70	10,073
" " " 1876	9,005	434	1,727	70	11,236
" " " 1877	11,053	542	1,824	62	13,481
" " " 1878	9,537	480	1,959	54	12,030
" " " 1879	8,995	416	1,756	53	11,220
" " " 1880	8,829	549	1,863	59	11,300
" " " 1881	7,007	468	1,681	73	9,229
" " " 1882	7,286	522	1,750	62	9,620
" " " 1883	7,858	423	1,551	48	9,880

From these figures it will be seen that the number of men committed has increased by 572 or 7.85 per cent.; the number of boys has decreased by 99 or 18.96 per cent.; the number of women has decreased by 199 or 11.37 per cent., and the number of girls by 14 or 22.58 per cent. The actual increase in the total commitments of the year is 260 or 2.70 per cent. Table No. 1 of the usual group of Statistical Tables, is given here instead of at the end of the Report, so that it may be seen, while reference is being made to the fluctuation in the number of commitments, at what points these changes occurred:—

NAME OF GAOL.	Number of Prisoners committed in the year ending 30th Sept., 1883.			Number of Prisoners committed in the year ending 30th Sept., 1882.			Increase.			Decrease.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Barrie	226	29	255	217	31	248	9	.....	9	.....	2	2
Berlin	84	12	96	76	7	83	8	5	13	.....	.....	.....
Belleville	151	27	178	170	38	208	.....	.....	.....	19	11	30
Brantford	173	43	216	205	47	252	.....	.....	.....	32	4	36
Brampton	103	6	109	133	4	137	.....	2	2	30	.. ..	30
Brockville	172	43	215	153	35	188	19	8	27	.....	.....	.....
Cayuga	39	3	42	41	9	50	... ..	.....	.....	2	6	8
Cornwall	41	12	53	45	5	50	.....	7	7	4	.....	4
Cobourg	107	14	121	81	19	100	26	.....	26	....	5	5
Chatham	109	8	117	141	7	148	.....	1	1	32	.....	32
Goderich	46	12	58	72	15	87	.....	.....	.....	26	3	29
Guelph	164	23	187	170	22	192	.....	1	1	6	.....	6
Hamilton	761	137	898	771	187	958	.....	.....	.....	10	50	60
Kingston	125	28	153	98	27	125	27	1	28	.....	.....	.....
London	676	130	806	641	134	775	35	.....	35	.....	4	4
Lindsay	35	4	39	39	8	47	.....	.....	.....	4	4	8
L'Orignal	21	2	23	14	2	16	7	.....	7	.....	.....	.....
Milton	92	5	97	134	13	147	.....	.....	.....	42	8	50
Napanee	54	10	64	55	13	68	.....	.....	.....	1	3	4
Ottawa	530	180	710	462	207	669	68	.....	68	.....	27	27
Owen Sound	122	8	130	157	11	168	.....	.....	.....	35	3	38
Orangeville	34	9	43	29	6	35	5	3	8	.....	.....	.....
Perth	60	8	68	43	12	55	17	.....	17	.....	4	4
Picton	87	2	89	93	3	96	.....	.....	.....	6	1	7
Pembroke	73	5	78	71	3	74	2	2	4	.....	.....	.....
Peterborough	172	9	181	109	12	121	63	....	63	.....	3	3
Prince Arthur's Land'g	407	5	412	125	6	131	282	.....	282	.....	1	1
Simcoe	100	8	108	86	10	96	14	.....	14	.....	2	2
St. Catharines	118	14	132	83	21	104	35	.....	35	.....	7	7
Sarnia	207	20	227	265	21	286	.....	.....	.....	58	1	59
Stratford	121	11	132	124	28	152	.....	....	.....	3	17	20
Sandwich	211	51	262	225	45	270	.....	6	6	14	.....	14
St. Thomas	182	11	193	194	18	212	.....	.....	.....	12	7	19
Sault Ste. Marie	23	1	24	26	.....	26	.....	1	1	3	.....	3
Toronto	1982	651	2633	1902	734	2636	80	.. ...	80	.....	83	83
Walkerton	40	7	47	49	5	54	.....	2	2	9	.....	9
Woodstock	176	22	198	177	24	201	.....	.....	.....	1	2	3
Welland	225	10	235	166	11	177	59	.....	59	.....	1	1
Whitby	105	11	116	79	13	92	26	.....	26	.....	2	2
Lock-ups—												
Bracebridge	22	1	23	20	2	22	2	... ..	2	.....	1	1
Gore Bay	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Current	19	1	20	3	.....	3	16	1	17	.....	.....	.....
Manitowaning	19	2	21	22	1	23	.....	1	1	3	.....	3
Mattawa	37	.....	37	11	.....	11	26	.....	26	.....	.....	.....
Parry Sound	23	4	27	22	1	23	1	3	4	.....	.....	.....
Silver Islet	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minden	6	.....	6	4	.....	4	2	.....	2	... ..	.....	.....
Haliburton	1	.....	1	.....	.....	.....	1	.....	1	.....	.....	.....
Totals	8281	1599	9880	7803	1817	9620	830	44	874	352	262	614

The gaol shewing the largest increase in the number of male prisoners committed to it, is Prince Arthur's Landing, where an increase of no less than 282 has taken place. This is, of course, accounted for by the presence in the district of a very large number of navvies and others employed in the construction of the Canada Pacific Railway. On noticing the changes in the commitments to the other gaols, I made enquiries of the sheriffs whether any particular local causes existed for the increases or decreases reported. I subjoin some of the replies:—

The Sheriff at Cobourg, where there was an increase of twenty-six in the number of males committed, says :—"I notice that out of the number of prisoners committed, over two-thirds were sent from the towns of Port Hope, Cobourg, and Bowmanville, from which it would appear that the increase is due to the denser population, and the vigilance and greater efficiency of the police force in the towns." The Sheriff of Brampton, from which place a decrease of thirty male commitments was reported, says :—"I do not know of any particular reason to be assigned, unless it be that the country has been prosperous, and employment easily obtained by those who would otherwise have been tramps on our hands.

In Ottawa, where there was an increase of sixty-eight in the number of males committed, and a decrease of twenty-seven in the number of females, the Sheriff is unable to give any reason for the increase, and thinks that the "Reformatory for Females may account for the decrease in the women."

The Sheriff at Peterborough, where there was an increase of sixty-three males writes as follows :—"During the past year several hundred men have been employed on railway works in this neighbourhood. In the early part of the year, these were principally English and Irish, and while they were employed the number of commitments increased largely. During the summer these men were discharged, and Italians employed in their place, resulting in an immediate falling off in the commitments."

As regards the commitments to the Toronto gaol, where there was an increase of eighty in the number of males, and a decrease of eighty-three in the number of females, the Sheriff states that "no special reason can be assigned for the differences in the numbers of males and females committed. In reference to former years, I find the numbers fluctuate in every instance—the result, no doubt, of very trifling causes."

The Sheriff at Welland accounts for the increase of fifty-nine male commitments to his gaol, by stating, that as Welland is a frontier county, it is made "a resort for tramps and 'dead-beats' from Buffalo during the winter."

The reason given for the decrease of commitments to the Brantford gaol, is, that when tramps and vagrants are brought before the Police Magistrate in that city, he frequently imposes a sentence of six months imprisonment in the Central Prison.

The decrease at Owen Sound is accounted for by the demand for labourers on the Canada Pacific Railway, "which has drawn away from the county the vagrant class."

The Sheriff at Milton, writes as follows :—"The only reason I can give for the decrease in the number of persons committed to the gaol here, both male and female, is, that we have had fewer vagrants. Labour has been scarce and wages high, so that all who could be induced to work found employment, and consequently this part of the country did not suffer so much from the 'tramp nuisance' and from idlers. The Canada Temperance Act is in force in this county, but I cannot say whether it has had any effect in reducing the number of commitments."

The Sheriff of Goderich gives much the same reason for the decrease in the commitments to his gaol, as those just recited.

The increase at Whitby is explained by the Sheriff in these terms :—"A wave of crime appears to have rolled over this section, intensified by the hard times. Owing to the increased vigilance of the chief constable, a greater number of persons have been arrested."

The Sheriff at Hamilton, where there was a decrease of fifty female prisoners, writes as follows :—"The reason for the decrease in the number of female prisoners committed during the year, is, that a great number of the old gaol fre-

quenters are undergoing long sentences in the Mercer Reformatory, varying from twelve to twenty-three months. Others have left the city for fear of being sent there also, as our Police Magistrate is a terror to evil-doers, more especially of the female sex."

The commitments of male prisoners to the Chatham gaol have decreased by thirty-two, and in connection with this decrease the Sheriff says:—"I believe the same to be in a great measure owing to a scarcity of tramps and other vagrants, (hitherto infesting our county) through fear of the strict penalties imposed by our present Police Magistrate, and to the fear those criminally disposed have of the Central Prison."

From the nature of some of these replies, it will be seen that what was the cause of a decrease of commitments in one section of the country, was often the cause of an increase of crime or disorder in another. For instance, while the railway works in progress in the Thunder Bay District, were the means of drawing away from the counties of Grey, Halton, Huron, etc., large numbers of vagrants and tramps, from whose ranks come so many of the persons committed for drunkenness and disorder, they simply transferred that class to the neighbourhood of Prince Arthur's Landing, with the result of more than doubling the commitments to the gaol there. The unusual severity of the winter of 1882-83, may, too, have been the cause of increased committals for vagrancy during the cold weather.

The following tables shew, in a convenient form, the nature of the offences with which the persons committed to gaol during the year were charged, and they also contain similar information respecting the seven preceding years:—

1. CRIMES AGAINST THE PERSON.

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.
Assault, common	743	641	724	549	623	556	576	572
Assault, felonious	124	134	98	125	85	88	124	91
Cutting and wounding, stabbing, and shooting with intent	127	92	71	62	63	40	73	52
Rape, and assault with intent	48	39	37	45	44	36	56	46
Murder	30	39	24	25	42	23	29	30
Manslaughter	12	7	6	10	7	7	9	12
Attempt at suicide	1	7	11	6	9	8	10	8
Miscellaneous	43	31	38	25	31	95	43	48
	1128	990	1009	847	904	853	920	859

2. CRIMES AGAINST PROPERTY.

Arson and Incendiarism	45	35	47	49	31	22	23	47
Burglary	63	58	89	103	93	44	63	61
Counterfeiting and passing counterfeit money	21	23	10	19	15	15	11	1
Destroying and injuring property	104	115	138	126	130	67	138	80
Embezzelment	21	24	29	28	23	17	19	25
Forgery	46	31	48	64	50	30	34	35
Fraud, and obtaining money or goods under false pretences	140	137	151	131	101	82	106	106
Horse, cattle and sheep stealing	75	84	89	86	70	54	73	49
Housebreaking and robbery	62	43	57	102	103	80	67	61
Larceny	1764	2070	1818	1626	1669	1363	1401	1278
Receiving stolen goods	54	38	64	38	42	26	45	33
Trespass	49	73	103	122	123	112	110	120
Miscellaneous	50	42	43	29	73	78	85	93
	2494	2773	2686	2523	2523	1990	2175	1989

3. CRIMES AGAINST PUBLIC MORALS AND DECENCY.

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.
Bigamy	12	12	9	14	5	6	10	6
Inmates and frequenters of houses of ill-fame	129	137	197	189	236	171	194	133
Keeping houses of ill-fame	81	89	117	92	134	102	137	130
Perjury	12	32	25	25	27	15	15	8
Seduction	3	2	2	2	.....	.....	.....	1
Indecent assault and exposure	45	27	40	41	40	38	32	45
Miscellaneous	49	116	129	86	50	67	78	13
	331	415	519	449	492	399	466	336

4. OFFENCES AGAINST PUBLIC ORDER AND PEACE.

Abusive and obscene language	71	73	101	72	95	65	55	87
Breaches of peace, breaches of by-laws, escapes from and obstructing constables	116	90	143	130	109	83	91	137
Carrying unlawful weapons	13	25	37	27	34	43	42	35
Deserting employment	45	21	27	10	27	18	41	30
Drunk and disorderly	3868	4032	3785	3581	3795	3328	3497	3895
Selling liquor without license, and selling or giving it to Indians	53	160	153	122	115	83	70	53
Threatening and seditious language	83	48	36	48	48	57	26	50
Vagrancy	2128	3888	2524	2536	2210	1580	1449	1554
Miscellaneous	156	217	260	174	207	131	120	227
	6533	8554	7066	6700	6640	5388	5391	6068

5. OTHER CAUSES FOR WHICH PERSONS WERE DETAINED AS PRISONERS.

Contempt of Court	90	136	133	149	180	124	76	97
Debtors	72	60	67	72	86	46	56	64
Detained as witnesses	29	17	31	12	18	17	16	21
Lunatics and persons dangerous to be at large	348	336	307	339	346	338	432	345
Non-payment of fines and costs	42	41	39	.....	.....	.....	.....	.....
Want of sureties to keep the peace	169	159	173	129	111	74	88	101
	750	749	750	701	741	599	668	628
Total number of persons committed for the respective years	11236	13481	12030	11220	11300	9229	9620	9880

It will be at once noticed that, as compared with the previous year, there was a considerable falling-off in the aggregate in the number of persons committed during 1883 for crimes against the person, against property, and against public morals and decency. Under the first head, the commitments have decreased by 61, or 6.63 per cent.; under the second by 186, or 8.55 per cent., and under the third by 130, or 27.89 per cent. These three summaries embrace the most serious crimes, and it is gratifying to find a decrease in the number of persons charged with them. Referring to the specific crimes embraced in the first heading, there is a decrease in the number of commitments for each of them, except for murder, which is increased by one, for manslaughter, which is increased by three, and for miscellaneous crimes, which are increased by five.

Regarding the crimes coming under the second heading, there is a considerable increase in the number of persons charged with arson. The most noticeable feature, however, is the falling-off in the commitments for larceny, which are less this year than in any of the seven preceding years.

In the crimes against public morals and decency, which, form the third division, a large decrease in the persons committed as inmates and frequenters of houses of ill-fame will be observed.

Coming now to the fourth division, comprising "offences against public order and peace," an increase in the aggregate number of commitments, under this head, of 677, or 12.55 per cent., is shewn. The most deplorable feature is the very large increase in the commitments for drunkenness, the figures being, in 1882, 3,497; in 1883, 3,895, an increase of 398, or 11.38 per cent. The percentage which the committals for drunkenness bears to the total commitments is 39.42, against 36.35 per cent. in 1882, shewing that, not only are the commitments for this offence numerically greater, but that the proportion they bear to the total commitments is also increased. It is to be hoped that the efforts now being made by the various associations for the promotion of temperance, will have the effect of reducing the large number who find their way, through this vice, to the gaols of the Province. There is also an increase of 105, or 7.24 per cent., in the committals for vagrancy, as compared with the previous year.

In the number of commitments coming under the fifth section, there is a decrease of forty. Looking at the specific causes, it is seen that the number of persons committed as insane has decreased to 345, as compared with 432 in 1882.

The disposition made of the 9,880 persons committed to the gaols of the Province is set forth in the table printed below:—

Acquitted on being brought to trial, and discharged	2034
Discharged without trial by order of judges, magistrates, and courts, including remand cases	810
Detained for want of sureties to keep the peace	127
Detained as witnesses	21
Detained as fraudulent debtors	70
Detained as lunatics, idiots, and persons unsafe to be at large	345
Died before trial	4
Detained by civil processes other than above	49
Escaped before trial	2
Waiting trial and otherwise detained on the 30th September, 1883	118
Found guilty and sentenced	6300
Total number of commitments	9880

The places of confinement, to which the 6,300 persons who were found guilty, were sentenced, are set forth in the following statement, and similar information is given as regards the sentenced prisoners of the previous year:—

	1882.	1883.
Sentenced to the Kingston Penitentiary	123	105
Do to the Reformatory for Boys	80	60
Do direct to Central Prison	401	282
Do to the Common Gaols and subsequently transferred to the Central Prison	382	372
Do direct to the Reformatory for Females	191	90
Do to Common Gaols and subsequently transferred to the Reformatory for Females	32	30
Do to the Common Gaols and there detained until expiration of sentence	4711	5361
Total	5920	6300

It will be at once observed that the number of prisoners sentenced direct to the Kingston Penitentiary and Central Prison was in the past year greatly

reduced. This, in a large measure, is accounted for by the falling-off in the number of commitments for the more serious offences and for larceny, which has already been commented upon. The decrease in the number of women sentenced to the Reformatory for Females, may be explained by the fewer commitments of women in the aggregate and by the decrease in the number of women convicted of keeping and frequenting houses of ill-fame. The increase in the prisoners sentenced to the gaols and there detained during the period of sentence, is, of course, explained by the larger number of persons committed for and convicted of offences for which a short term of confinement in the Common Gaol is the usual punishment.

Reference to the summary of crimes and offences will shew that the persons charged with such crimes, etc., for which convictions could be obtained, numbered 9,252. Of these persons, as will be seen by the summaries last given, 6,300 were convicted and sentenced, the acquittals being 2,952, or 31.90 per cent., as against 38.47 in the previous year.

The following tables shew the crimes and offences for which the convicted persons were sentenced. They are divided into the same headings as the table of commitments, and the number of committals under each heading and sub-heading are also given:—

1. *Crimes against the Person.*

	Total commitments for the year.	Number found guilty and sentenced.
Assault, common	572	363
Assault, felonious	91	64
Cutting and wounding, stabbing, and shooting with intent	52	29
Rape, and assault, with intent	46	15
Murder	30	4
Manslaughter	12	4
Attempt at suicide	8	1
Miscellaneous	48	36
	859	516

2. *Crimes against Property.*

Arson and incendiarism	47	9
Burglary	61	27
Counterfeiting and passing counterfeit money	1	..
Destroying and injuring property	80	55
Embezzlement	25	7
Forgery	35	13
Fraud, and obtaining money or goods under false pretences	106	39
Horse, cattle and sheep stealing	49	24
Housebreaking and robbery	61	30
Larceny	1278	814
Receiving stolen goods	33	17
Trespass	120	98
Miscellaneous	93	73
	1989	1206

3. *Crimes against Public Morals and Decency.*

Bigamy	6	4
Inmates and frequenters of houses of ill-fame	133	79
Keeping houses of ill-fame	130	100
Perjury	8	2
Seduction	1	....
Indecent assault and exposure	45	26
Miscellaneous	13	10
	336	221

4. *Offences against Public Order and Peace.*

Abusive and obscene language	87	66
Breaches of peace, breaches of by-laws, escapes from and obstructing constables	137	79
Carrying unlawful weapons	35	23
Deserting employment	30	19
Drunk and disorderly	3895	2798
Selling liquor without a licence, and selling or giving it to Indians	53	39
Threatening and seditious language	50	12
Vagrancy	1554	1116
Miscellaneous	227	205
	6068	4357
Totals	9252	6300

Tables shewing the periods of sentence passed on the convicted prisoners, and the sex, nationalities, religious denominations, social condition, habits, etc., of the total number of prisoners committed are here annexed:—

Periods of Sentence.

For periods under thirty days	2779
For thirty days, and up to sixty days, or two months, not including the last term	1837
For sixty days, or two months	477
Over two months to three months	348
Over three months to four months	119
Over four months to five months	23
Over five months to six months	354
Over six months to nine	38
Over nine months and up to one year inclusive	83
Over one year and up to two years	75
Over two years and up to three years in the Penitentiary	60
Over three years in the Penitentiary	45
For periods of any length in the Reformatory for Boys	60
Sentenced to death	2
	6300

Sex.

	1882.	1883.
Male	7803	5194
Female	1817	1106
	9620	6300

Nationalities.

Born in Canada	4510	4448
Born in England	1448	1557
Born in Ireland	2169	2336
Born in Scotland	608	585
Born in the United States	694	706
Born in other Countries	191	248
	9620	9880

Religious Denominations.

Roman Catholic	3352	3759
Church of England	3152	3154
Presbyterian	1293	1280
Methodist	1245	1130
Other Denominations	578	557
	9620	9880

Social Condition.

Married	3687	3685
Unmarried	5933	6195
	9620	9880

Habits.

Temperate	2942	2378
Intemperate	6678	7502
	9620	9880

Educational Status.

Could read and write	7037	7398
Could neither read nor write	2583	2482
	9620	9880

The number of prisoners confined in the various custodial institutions of the Province at the close of the past official year, and of the year preceding, is exhibited in the following summary:—

	1882.	1883.
In the Common Gaols	520	523
In the Central Prison, Toronto	324	273
In the Reformatory for Boys, Penetanguishene	263	245
In the Reformatory for Females, Toronto	173	138
In the Dominion Penitentiary, Kingston	576	505
	1856	1684

Gaol Expenditures.

The usual table is appended shewing the cost of maintaining the common gaols during the past and five preceding years under the headings of rations, clothing, fuel, salaries and wages, and repairs:—

YEAR.	Total number of prisoners in custody each year.	Cost of rations, clothing, fuel, etc. each year.	Cost of salaries and wages of gaol officials each year.	Cost of repairs.	Total gaol expenditure.
		$ c.	$ c.	$ c.	$ c.
1878	12,030	60,217 83	63,591 11	7,307 66	131,116 60
1879	11,220	52,856 24	63,914 40	5,583 44	122,354 08
1880	11,300	49,037 14	64,084 34	3,504 96	116,626 44
1881	9,229	45,001 05	63,502 00	3,412 10	111,915 15
1882	9,620	44,768 92	63,794 30	4,665 53	113,228 75
1883	9,880	44,783 50	64,935 96	4,706 20	114,425 66

Tables No. 13 and 14, to be found at the end of this section of the report, give details of the expenditures of each gaol. From the latter table, it will be seen that the daily cost for each prisoner under the headings of fuel, food and clothing was reduced by a little over one cent, as compared with the preceding year.

Of the 9,880 prisoners committed to the gaols during the official year, 2,545 were criminal prisoners whose maintenance was chargeable to the Province, and was paid for out of the Administration of Justice Appropriation; and the remaining 7,335 were a charge upon the Municipalities. The number of days during which these two classes of prisoners remained in custody is shewn below, separately and in the aggregate, viz:—

2545 Criminal Prisoners remained in Gaol.....	53,538 days.
7235 Municipal " " "	147,551 "
9880 prisoners of both classes remained in gaol....	201,089 days.

Deaths in Gaol.

The deaths during the year under report numbered fifty-nine, being many more than usual. The majority of the prisoners who died were old and enfeebled vagrants, many of whom had been continuous gaol residents for several years. In two or three instances the ages of the deceased were said to be over one hundred years. In the Kingston gaol, a prisoner who was on remand committed

suicide by cutting his throat. An inquest was held and enquiry made into the circumstances. The jury found no fault with the conduct of the Gaol officials in the matter.

In the *Parry Sound* Lock-up, a man committed on a charge of insanity, also committed suicide by driving a nail through his skull into his brain. The coroner's jury exonerated the lock-up keeper from any blame.

Escapes.

During the past year fifteen prisoners succeeded in making their escape from confinement, and no less than eleven of these eluded recapture. A summary of the circumstances under which these escapes took place is given below:

A prisoner named Haywood, who was waiting trial for larceny, escaped from the *Berlin* gaol on Sunday, the 6th May. Dr. O'Reilly when inspecting the gaol on the 29th May, enquired into this matter and reported upon it to the Government as under: "I found that the prisoner Haywood had escaped by climbing over the wall. This he was able to do by piling up against it several buckets and a short bench, which he took into the yard from the corridor, as the door had been left open while the turnkey went to the Sunday School, and while the gaoler was not in attendance in the corridor or yard. This escape was due entirely to a laxity of attention on the part of the officers of the gaol, and for which they have been duly reprimanded."

From the *Chatham* gaol a prisoner named Green, who was waiting trial, escaped on the 8th August. He was with two other prisoners in the yard in charge of the turnkey, when the latter was alarmed by an outcry made by a lunatic confined in the adjacent ward. He ran in to see what was the matter, but, as soon as he got inside, the lunatic closed with him, and shut to the door. Before the turnkey could get assistance or return to the yard, the prisoner Green had escaped over the wall. The prisoner was enabled to do this by the aid of the bars of a strong ventilating pipe, which crossed a corner of the yard, and by a projecting ledge in the yard wall. Dr. O'Reilly, when next visiting the gaol, made the following minute respecting this escape, viz: "The turnkey ought not to have left his post in the yard even for a moment, as such action was contrary to Rule No. 41, but under the circumstances there was some slight cause for his doing so." Dr. O'Reilly gave orders for the removal of the ventilating pipe, and also for the pointing-off of the projecting ledge with mortar and broken glass.

A boy named Towns, who was under sentence to five months' imprisonment in *Milton* gaol, escaped therefrom on the 8th May. It appears from enquiry made that the boy, who had behaved himself well and had, previous to his commitment, borne a good character, was kept in a corridor by himself, and was set to do the prison cooking. For this reason, the boy's cell was left unlocked, so that he could get out early and do his work in the corridor. On the evening the escape took place, the key was left in the lock on the outside of the door, and this key the boy succeeded in turning with a piece of wire from his pail, and thus opened the door and hid in the entrance. When the gaoler made his round at night, the boy locked him in and then ran through the outer door, then through the gaol kitchen, from thence into the yard, the wooden fence of which he climbed. Dr. O'Reilly visited the gaol soon after this escape took place.

and reported to the Government that it was entirely owing "to a laxity on the part of the gaoler, who seemed to have allowed every condition favourable to the escape to exist, even to leaving a ladder in the yard." For this carelessness he was severely reprimanded by Dr. O'Reilly.

A prisoner named John Burk escaped from the *Prince Arthur's Landing* gaol on the 28th July, under the following circumstances, as reported by the Sheriff. Burk, with other prisoners, was engaged under the care of the turnkey, who was the only officer then in the gaol, in scrubbing the cells and passages up stairs. A constable arriving with a prisoner, the turnkey went down to admit him, and whilst he was absent, the prisoner, Burk, managed to unfasten the lock of the door leading into the court-room, from a window of which, sixteen feet from the ground, he jumped, and made his escape.

On the 26th September another prisoner succeeded in escaping from this gaol. With two other prisoners, he was at work on the gaol lot, under the supervision of the turnkey. The latter, seeing that a load of timber, which was being brought in for a building in the course of erection on the gaol lot, had stuck in the gateway, left the prisoners to help the man with the load. The prisoner took advantage of this, and made a dash for his liberty. He succeeded in getting into the bush, and made good his escape. Dr. O'Reilly informed the turnkey that "When prisoners are placed under his charge, it is his duty to look after them, and them alone," and warned him to be more careful in the future.

A fire took place one night last winter in the *St. Thomas* gaol, and the prisoners had to be taken into the yard until the fire was subdued. In the confusion, one prisoner managed to make his escape.

From the *Woodstock* gaol, two prisoners escaped during the official year. The first was a prisoner named John Rice, who was waiting trial for rape. On the morning of the 30th October, 1882, the turnkey, as he thought, let all the prisoners, including Rice, from one corridor into the yard. He then went to the kitchen with the prisoners' breakfast dishes, and from there went back to the yard, leaving the corridor and kitchen doors unlocked. The turnkey, on getting into the yard, missed Rice, who had concealed himself in the day room, and had not gone into the yard, and went back to the corridor for him. As soon as he entered the corridor, Rice shut to the door, which closed with a spring, and could not be opened from the side the turnkey was on, and went through the doors which had been left unlocked, into the kitchen, and from there into the wood-yard. Escape was easily effected from there, as the outer gate was open while some stores were being brought in. The turnkey was to blame for his want of vigilance, and also for his carelessness in leaving unlocked the gates he had passed through, from the kitchen to the yard.

The second escape was more simple. A prisoner, under sentence for petty larceny, was at work in the gaol garden, and the turnkey, "happening" (as he reported) "for a minute or two to turn his back," he ran away, and eluded recapture. The turnkey was severely reprimanded for his careless supervision of the prisoner. More severe measures might have been taken, but for the turnkey's previous general efficiency, and for the fact that he has a large family depending on him for support.

A prisoner named Matthias Egeter, under sentence to twenty-one months imprisonment in the Central Prison, escaped from the *Welland* gaol on the 13th November, 1882, under the following circumstances: The prisoner, Egeter, and

another man, were allowed out of their cells at night, to attend to a sick prisoner confined in the same corridor with them, On the morning of the escape, the turnkey let Egeter go into the yard to empty the buckets, while the other prisoner, who was the cook, went into the kitchen. Leaving Egeter in the yard, the turnkey went into the Gaoler and Sheriff's offices to light the fires. The gaoler arrived just as this work was being finished, and the prisoner-cook came to him and said that Egeter had climbed over the wall. It was then found that he had taken a plank, which was used when wheeling wood into the yard, and put it from the wood-pile to the top of the wall, and from that dropped to the ground. On the 18th November he was recaptured, and on being brought before the county Judge, was sentenced to an additional term of three months imprisonment for breaking gaol. On the circumstances of the escape being reported to Dr. O'Reilly, he wrote a letter to the Sheriff, from which I make extract, as under, viz.:

"In regard to this matter I have to make the following remarks:

"(1) A prisoner under sentence for such a long term as twenty-one months, should not have been allowed out of his cell at night, for the purpose of attending upon a sick prisoner.

"(2) The turnkey displayed great carelessness in leaving the prisoner, Egeter, in the yard alone, more especially as he was under a long sentence.

"(3) Either the gaoler or turnkey was guilty of carelessness in leaving a long plank in the yard, to which they allowed the prisoner access.

"(4) Both the gaoler and turnkey are, therefore, responsible for the escape, as it resulted from pure carelessness and want of supervision.

"You will please be good enough to read this letter to these officials, and severely reprimand them; and I am of the opinion that the expenses incurred in recapturing this prisoner should be borne by them.

"You will also be good enough to call their special attention to Rule No. 95, which stipulates that no planks, boards or other materials which could be used in aiding escape, should be left in the yard. Had this rule been observed in the present case, the prisoner could not have effected his escape."

Another escape took place from this gaol on the 30th September, the day on which the year now under report closed; and up to the writing of this report, enquiry has not been made into the attendant circumstances.

From the lock-up at *Bracebridge*, in the Muskoka district, four prisoners escaped on the 28th May, two of whom were recaptured. They tore the clothes rack from the wall of the day room, and with it pried the bars of the window apart, and thus escaped. On this being reported to me, I wrote to the Architect of the Public Works Department, asking him to have the windows protected by additional bars, and also to have the cell doors strengthened. My recommendation was duly carried out.

Just at the close of the official year 1881-1882, a prisoner escaped from the *Kingston* gaol under circumstances which seemed to demand special enquiry into them, with a view to determining the cause of the escape. I could not make this enquiry until after my last annual report was written, and therefore I have to refer to the matter in this one. As the result of my investigation, I found that the prisoner, who was named McWhinney, was on the afternoon of the 23rd September, at work breaking stones with other prisoners in the yard, under the charge of the first turnkey. In order to keep up a communication with the

gaol officials inside the gaol, the turnkey in charge of the working gang was required to knock at the yard door every fifteen minutes, if all was well; the absence of the signal at the proper time being a warning to the other officials that either the turnkey in the yard was not attending to his duties, or something else was wrong. On the afternoon that the escape took place, the first turnkey went to make this signal at 3.45 p.m., and in order to reach the door at which to knock, he had, owing to an angle in the wall, to lose sight of the prisoners for perhaps not quite a minute, if he was prompt in his actions. On his return to the immediate vicinity of the prisoners, which, he stated, was directly after he gave the necessary signal, he missed McWhinney, and on asking for him was told by one of the prisoners that McWhinney had gone to the water-closet. This explanation satisfied the turnkey for the time being, more especially as the prisoner had been complaining in the morning of diarrhœa; but after a while, thinking that he was absent very long, he looked in the water-closet and of course found it empty. The turnkey did not then seem to realize that the man had escaped, but thought he was hiding in the well-house, or straw and coal shed, and made a sort of desultory search therein, instead of at once watching the wall at the rear of those places, to make sure that no attempt was being made in that direction, the only possible place where an escape could have been accomplished without observation, as the sheds named were of such a height as to shut out a view of the wall from a person standing at quite a distance from them. The second turnkey came into the yard at four o'clock, and instead of at once sending him to report to the gaoler the supposed escape of the prisoner, the first turnkey continued to turn over the straw in the shed, but at last he called the gaoler.

The only conclusion I could arrive at was that McWhinney, as soon as the turnkey left to make the signal, got up and went towards the water-closet, so that in the event of the turnkey looking back his suspicions might not be aroused, and that when he thought the turnkey had turned the angle of the wall to reach the door, McWhinney ran across the yard and scaled the wall at the back of the pump-house and coalshed, with the assistance of a friend outside, (probably a man discharged from the prison the previous morning). I also could come to no other conclusion, from the evidence before me, that the first turnkey facilitated the escape by his indifference to his duties, or incapacity to perform them. A corroboration of this opinion was given by the fact that but a few days previous to the escape of McWhinney, this turnkey had allowed two other prisoners he was supervising, to seize him and take a revolver from him, and to make their escape. They were, however, immediately retaken by the local police. The Sheriff being informed of the conclusion I arrived at, dismissed the first turnkey.

I also recommended that the County Council should have the roofs of the pump-house and coalshed lowered, so that a view of the wall should not be shut off by them.

One most important reason for giving an account of the manner in which escapes take place from the prisons, is that the gaolers throughout the Province may be made aware of the different methods employed by members of the class under their charge, to regain their liberty and that they may thus be put on the alert.

Changes in Staff.

The changes in the staff of the gaols were as under :—

London Gaol—Mr. Fysh, the gaoler, died, and Mr. Kelly, formerly head turnkey, was appointed.

Ottawa Gaol—Mr. Wm. Kehoe was appointed gaoler, *vice* Mr. Eastwood, resigned.

The tables containing full statistical information respecting the movements of prisoners, etc., are annexed ; also, the separate reports upon the Common Gaols.

TABLE No. 2.

Shewing the total number of prisoners who were in the several gaols of the Province on the evening of the 30th September, 1883, and the nature of their imprisonment.

NAME OF GAOL.	Classification.				Nature of Imprisonment.						Total number of persons who remained in custody on 30th September, 1883.
	Men.	Women.	Boys under 16 years.	Girls under 16 years.	Waiting trial.	Under sentence for periods of two months and under.	Under sentence for periods over two months.	In default of sureties to keep the peace.	Insane, idiotic or imbecile persons.	Otherwise detained.	
Barrie	14	2			4	7	4		1		16
Berlin	3	4			2	2	2		1		7
Belleville	7	5	1		1	7	5				13
Brantford	7	4		1	5	3	4				12
Brampton	3	1			1	1	1		1		4
Brockville	20	6			6	9	8		3		26
Cayuga	3				1					2	3
Cornwall	4	1			2	1				2	5
Cobourg	12	3			8	3	3		1		15
Chatham	8				3	3	1		1		8
Goderich	7	2			1	2	4	1	1		9
Guelph	11	2	1			7	4	1	1	1	14
Hamilton	25	11	3		9	18	7	1	1	3	39
Kingston	8	2			2	3	4		1		10
London	29	8	1		8	13	14		3		38
Lindsay											
L'Orignal	1									1	1
Milton											
Napanee	1						1				1
Ottawa	20		3		5	10	8				23
Owen Sound	7	1			1	2	5				8
Orangeville	7	2				1	6		2		9
Perth	4	2	1			1	6				7
Picton	2				2						2
Pembroke	6	1	3		3		7				10
Peterborough	6	1					7				7
Prince Arthur's Landing	8					5	2			1	8
Simcoe	1	1							1	1	2
St. Catharines	13	1			3	4	4	1	2		14
Sarnia	5	2			1	1	1	2	2		7
Stratford	7	2			5	2	1		1		9
Sandwich	19				10	6	1		2		19
St. Thomas	14		1		7	6			1	1	15
Sault. Ste. Marie	2	1			2				1		3
Toronto	66	52	5		20	83	17		2	1	123
Walkerton	1	2							2	1	3
Woodstock	10	1		1	3	5	3			1	12
Welland	11				1	7	2			1	11
Whitby	7	2			1	2	2		3	1	9
Lock-ups—											
Bracebridge											
Gore Bay											
Little Current											
Manitowaning											
Mattawa	1					1					1
Parry Sound											
Silver Islet											
Minden											
Total	380	122	19	2	117	215	134	6	34	17	523

TABLE

Shewing the number of prisoners *committed*, the number over and under 16 the peace, number of unsound mind, number acquitted on number sentenced, and number *com-*

NAME OF GAOL.	Total number *committed* during the year.			Number under 16 years of age.			Number over 16 year of age.			For the first time.	For the second time.	For the third time.
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.			
Barrie	225	29	255	7	2	9	219	27	246	211	30	9
Berlin	84	12	96	2	.....	2	82	12	94	58	16	9
Belleville	151	27	178	6	1	7	145	26	171	116	22	16
Brantford	173	43	216	8	6	14	165	37	202	111	33	17
Brampton	103	6	109	2	.....	2	101	6	107	57	25	15
Brockville	172	43	215	2	3	5	170	40	210	134	18	11
Cayuga	39	3	42	.....	.....	.....	39	3	42	32	6	2
Cornwall	41	12	53	1	.....	1	40	12	52	32	20	.....
Cobourg	107	14	121	2	.....	2	105	14	119	89	14	4
Chatham	109	8	117	3	.....	3	106	8	114	112	5	.....
Goderich	46	12	58	3	.....	3	43	12	55	36	5	2
Guelph	164	23	187	7	1	8	157	22	179	153	17	9
Hamilton	761	137	898	46	6	52	715	131	846	391	133	84
Kingston	125	28	153	2	.....	2	123	28	151	134	14	4
London	676	130	806	45	5	50	631	125	756	529	118	60
Lindsay	35	4	39	1	.....	1	34	4	38	37	1	1
L'Orignal	21	2	23	4	.....	4	17	2	19	22	1	.....
Milton	92	5	97	.....	.....	.....	92	5	97	75	11	5
Napanee	54	10	64	1	.....	1	53	10	63	36	16	8
Ottawa	530	180	710	43	4	47	487	176	663	603	68	31
Owen Sound	122	8	130	1	.....	1	121	8	129	85	20	11
Orangeville	34	9	43	3	.....	3	31	9	40	37	4	1
Perth	60	8	68	1	.....	1	59	8	67	46	5	4
Picton	87	2	89	1	.....	1	86	2	88	45	15	9
Pembroke	73	5	78	11	.....	11	62	5	67	52	2	3
Peterborough	172	9	181	6	.....	6	166	9	175	146	6	4
P. Arthur's Landing	407	5	412	.....	.....	.....	407	5	412	388	21	2
Simcoe	100	8	108	1	.....	1	99	8	107	64	29	7
St. Catharines	118	14	132	3	.....	3	115	14	129	116	14	2
Sarnia	207	20	227	10	1	11	197	19	216	219	5	3
Stratford	121	11	132	8	.....	8	113	11	124	105	14	9
Sandwich	211	51	262	5	.....	5	206	51	257	240	19	3
St. Thomas	182	11	193	2	1	3	180	10	190	133	38	17
Sault Ste. Marie	23	1	24	.....	.....	.....	23	1	24	19	4	1
Toronto	1982	651	2633	169	14	183	1813	637	2450	1516	561	303
Walkerton	40	7	47	1	.....	1	39	7	46	44	2	1
Woodstock	176	22	198	10	3	13	166	19	185	111	34	17
Welland	225	10	235	2	.....	2	223	10	233	150	37	21
Whitby	105	11	116	3	1	4	102	10	112	70	21	11
Lock-ups												
Bracebridge	22	1	23	1	.....	1	21	1	22	23	.....	.....
Gore Bay	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Current	19	1	20	.....	.....	.....	19	1	20	19	1	.....
Manitowaning	19	2	21	.....	.....	.....	19	2	21	19	.....	1
Mattawa	37	.....	37	.....	.....	.....	37	.....	37	37	.....	.....
Parry Sound	23	4	27	.....	.....	.....	23	4	27	24	2	1
Haliburton	1	.....	1	.....	.....	.....	1	.....	1	1	.....	.....
Minden	6	.....	6	.....	.....	.....	6	.....	6	3	3	.....
Totals	8281	1599	9880	423	48	471	7858	1551	9409	6680	1430	718

No. 3.

years of age, the number of recommittals, the number for want of sureties to keep
trial, number discharged without trial, number waiting trial,
mitted under civil processes.

For more than the third time.	For want of sureties to keep the peace.	Witnesses.	Lunatics and idiots.	Fraudulent debtors.	Under civil process.	Acquitted on trial and discharged.	Discharged without trial.	Died before trial.	Waiting trial.	Sentenced for any period.	Escaped before trial.	NAME OF GAOL.
5	3	1	13	10	.....	101	6	....	3	118	.....	Barrie.
13	1	.....	3	.....	1	25	.....	.....	2	61	1	Berlin.
24	1	.....	10	.....	2	57	3	.....	1	104	.....	Belleville.
55	.....	.....	6	.....	1	74	14	.....	5	116	.....	Brantford.
12	.....	.....	1	.....	2	80	.....	.....	1	25	.....	Brampton.
52	3	....	12	1	21	2	.....	.....	6	170	.....	Brockville.
2	.....	.....	6	.....	.....	11	5	.....	2	18	.....	Cayuga.
1	1	.....	12	.....	.....	5	6	1	2	26	.....	Cornwall.
14	6	.....	11	.....	.....	4	9	.....	3	88	....	Cobourg.
....	2	.....	3	3	.....	23	7	.....	3	76	.....	Chatham.
15	3	.....	5	2	.....	5	.....	.....	1	42	.....	Goderich.
8	2	1	12	2	.....	3	35½	1	.....	130	.....	Guelph.
299	37	5	11	.....	.....	12	178	.....	9	646	....	Hamilton.
1	1	.....	11	1	.....	2	2	.....	2	134	.....	Kingston.
99	.....	4	28	4	.....	249	46	.....	8	467	.....	London.
.....	1	.....	5	1	.....	2	.....	.....	1	29	.....	Lindsay.
....	2	.....	2	.....	.....	.....	1	.....	.....	15	.....	L'Orignal.
6	1	.....	1	.....	.....	1	54	.....	.....	34	.....	Milton.
4	1	.....	7	.....	.....	1	9	.....	.....	46	.....	Napanee.
8	1	1	28	16	2	211	7	1	5	438	.....	Ottawa.
14	3	1	7	1	.....	32	6	.....	1	79	.....	Owen Sound.
1	1	.....	4	.....	.....	5	1	.....	.....	32	.....	Orangeville.
13	2	.....	9	3	.....	1	7	.....	.....	46	.....	Perth.
20	1	.....	.....	.....	.....	.....	71	.....	2	12	.....	Picton.
21	.....	.....	3	.....	3	2	18	.....	3	49	.....	Pembroke.
25	.....	.....	17	1	.....	1	1	.....	.....	161	.....	Peterborough.
1	.....	4	.....	.....	.....	294	13	.....	.....	71	.....	P. Arthur's Landing.
8	2	.	4	...	1	13	31	1	.....	56	.....	Simcoe.
....	2	.....	7	.....	.....	8	11	.....	3	101	.....	St. Catharines.
.....	2	.	12	1	.....	44	1	....	1	166	.....	Sarnia.
4	....	.....	8	2	.....	1	53	.....	5	63	....	Stratford.
.....	....	2	12	.....	.....	27	8	.....	5	208	.....	Sandwich.
5	.....	3	6	3	1	35	3	....	11	130	1	St. Thomas.
.....	.....	.....	3	.....	.....	8	.....	.....	4	8	.....	Sault Ste. Marie.
253	19	2	33	10	.....	638	12	....	20	1899	.....	Toronto.
.....	.....	.....	3	2	11	9	3	.....	.....	19	.....	Walkerton.
36	.....	1	9	3	.....	4	84	.....	3	94	.....	Woodstock.
27	1	.....	1	1	4	2	57	.....	1	168	.....	Welland.
14	.....	.....	7	3	....	23	2	.....	1	80	....	Whitby.
												Lock-ups—
.....	....	...	1	.....	.....	13	8	.....	.....	1	.....	Bracebridge.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Gore Bay.
.....	17	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	Little Current.
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	.....	Manitowaning.
...	10	.....	2	.....	.....	4	.....	.....	.....	21	....	Mattawa.
.....	1	.....	1	.....	.....	2	1	.....	.....	22	....	Parry Sound.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	Haliburton.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	Minden.
1052	127	25	345	70	49	2034	810	4	114	6300	2	Totals.

TABLE

Shewing the offences for which prisoners were *committed*

NAME OF GAOL.	Abortion.	Abusive and obscene language.	Arson.	Assault.	Assault, felonious.	Attempted suicide.	Abduction.	Bigamy.	Breaches of the peace.	Breaches of by-laws.	Burglary.	Carrying unlawful weapons.	Contempt of court.
Barrie	1	4	7	4	....	.....	.....	.....	3	.....	3	...	7
Berlin	....	....	1	11	....	.....	.....	1	.....	1	3	1	....
Belleville	....	3	1	11	2	1	.....	.....	.....	....	3	.....	1
Brantford	....	1	....	12	7	.....	....	.....	1	....	.....	1	1
Brampton	....	1	...	2	1	.....	1	1	.....	.....	.....	.....	2
Brockville	....	2	.....	2	2	.....	.....	....	3	.....	2	.....	1
Cayuga	....	....	....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Cornwall	...	1	....	9	...	1	.....	.....	....	.....	.....	.....	.....
Cobourg	....	2	5	14	1	.....	.....	.....	.....	.....	.....	.....	2
Chatham	....	....	....	8	2	.....	.....	1	.....	4	1	.....	6
Goderich	....	2	...	1	1	....	.....	.....	.....	.....	.....	.....	7
Guelph	....	....	..	3	.....	.....	.....	.....	.....	.....	.....	3	1
Hamilton	..	9	3	87	7	.....	.....	1	.....	1	3	3	...
Kingston	....	....	3	2	3	..	.....	.....	.....	.....	1	.....	.....
London	....	10	5	53	3	.....	4	.....	.....	10	14	3	7
Lindsay	....	1	....	1	2	....	1	.....	1	.....	.....	1	....
L'Orignal	....	2	....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milton	...	1	....	1	.....	.....	.....	.....	.....	.....	.....	.....	3
Napanee	....	2	....	2	4	.....	.....	.....	.....	.....	.....	.....	1
Ottawa	....	11	2	56	2	2	.....	.....	33	5	3	2	.....
Owen Sound	....	1	....	16	.....	.....	.....	.....	.....	.....	1	.....	9
Orangeville	....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Perth	....	1	....	6	2	.....	.....	.....	.....	1	.....	.....	3
Picton	....	....	....	7	.....	.....	.....	.....	.....	.....	3	.....	.....
Pembroke	....	....	....	11	1	1	.....	.....	.....	.....	.....	2	3
Peterborough	....	4	3	19	.....	....	.....	.....	3	1	.....	.....	.....
P. Arthur's Landing	....	1	....	13	2	.....	.....	.....	15	.....	.....	7	5
Simcoe	...	....	7	4	4	.....	1	.....	.....	.....	.....	1	5
St. Catharines	....	2	1	10	2	.....	....	.....	.....	.....	1	.....	1
Sarnia	....	2	1	10	3	.....	.....	.....	.....	.....	.....	.....	6
Stratford	....	....	....	3	5	.....	.....	.....	.....	.....	.....	.....	8
Sandwich	....	4	2	12	.....	.....	.....	.....	.....	.....	.....	1	6
St. Thomas	....	....	...	5	3	.....	.....	.....	.....	.....	1	.....	3
Sault Ste. Marie	....	2	....	3	2	.....	.....	.....	.....	1	.....	.....	.....
Toronto	....	11	1	115	26	3	.....	.....	....	2	19	7	.....
Walkerton	....	....	2	4	.....	.....	.....	.....	.....	....	.....	.....	3
Woodstock	....	....	2	8	1	.....	.....	1	.....	.....	2	.....	.....
Welland	....	1	....	14	1	.....	.....	.....	.....	.....	.....	1	4
Whitby	1	....	1	12	2	....	.....	.....	.....	.....	1	.....	3
Lock-ups—													
Bracebridge	....	...	....	5	.....	.. ..	.....	.....	.....	.....	.....	... ..	.....
Gore Bay	....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Current	....	1	....	.....	.....	.. ..	.....	.....	.....	.....	.....	1	.....
Manitowaning	....	....	....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mattawa	....	3	....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....
Parry Sound	....	....	....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haliburton	....	....	....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Minden	....	2	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	2	87	47	572	91	8	7	6	59	26	61	35	98

No. 4.

during the year ended 30th September, 1883.

Counterfeiting and passing counterfeit money.	Cruelty to animals.	Cutting and wounding and attempting same.	Debtors.	Deserting employment.	Destroying and injuring property.	Detained as witnesses.	Drunk and disorderly.	Embezzlement.	Escaping from or obstructing constable.	Escaping from prisons.	Forgery.	Fraud, and obtaining money under false pretences.	Gambling.	NAME OF GAOL.
.....	...	.....	4	...	3	1	87	....	3	1	1	4	.....	Barrie.
....	....	.....	....	....	.....	....	14	...	.....	.....	2	1	.....	Berlin.
....	...	.....	2	....	2	....	57	...	.....	.....	2	5	.....	Belleville.
.....	....	.....	...	....	4	....	75	4	.....	.....	.....	3	.....	Brantford.
.....	....	.....	....	....	.....	....	4	....	.....	.....	1	.....	.....	Brampton.
.....	...	.....	1	....	.....	....	19	....	.....	.....	....	.....	....	Brockville.
.....	....	1	.....	...	1	...	7	....	.....	.....	.....	1	.....	Cayuga.
.. ..	..	.....	....	1	.....	....	8	1	.....	.....	....	.....	.....	Cornwall.
.....	...	.....	....	....	5	...	21	....	.....	.....	1	2	.....	Cobourg.
.....	2	....	3	...	1	....	23	....	.....	...	5	6	1	Chatham.
.....	.....	.....	2	.	.....	....	5	....	.....	.....	1	.....	.....	Goderich.
.....	....	1	2	....	.....	1	93	....	.. ..	.....	1	.....	.....	Guelph.
.....	1	1	....	1	.....	5	376	6	....	.....	2	14	...	Hamilton.
.....	.....	.....	1	3	.....	....	46	....	.....	3	.....	.....	.....	Kingston.
.....	4	...	4	6	14	4	269	2	3	. .	2	15	....	London.
.. ..	....	....	1	.....	.....	....	5	....	.....	.....	1	.....	.....	Lindsay.
.....	...	.....	.....	....	1	....	2	....	.....	.....	.....	.....	.....	L'Orignal.
.....	....	.....	....	1	.....	1	7	....	.....	....	.....	.....	.....	Milton.
...	....	.....	.....	.....	.....	....	18	....	.....	.....	.....	1	.....	Napanee.
.....	1	7	16	1	5	1	261	....	2	..	1	3	.....	Ottawa.
.....	....	1	1	2	.....	1	19	1	3	.....	.....	1	.....	Owen Sound.
.....	....	.....	.....	....	.....	....	.....	....	.....	.....	.....	....	.....	Orangeville.
.....	...	.....	.....	....	1	....	9	....	.....	.....	.....	.....	.....	Perth.
...	....	.....	....	....	2	...	70	...	.....	....	3	.....	..	Picton.
.....	..	1	..	....	1	....	17	2	.....	.....	.....	.....	.....	Pembroke.
.....	3	....	1	....	9	....	71	....	1	1	....	3	.....	Peterborough.
.....	.....	.....	....	1	.....	4	296	....	6	....	1	1	... .	P. Arthur's Landing
.....	....	....	.....	.....	.....	....	18	.....	.....	....	1	.....	.....	Simcoe.
.....	.. ..	....	.....	.....	2	....	65	.....	.....	.....	.....	2	.....	St. Catharines.
.. ..	.....	.....	4	.....	.....	....	75	1	.....	.....	.....	1	....	Sarnia.
.....	1	.....	2	....	1	....	37	....	....	1	.....	4	.....	Stratford.
.....	.. ..	.....	.....	3	7	....	121	.....	.....	1	.....	5	.....	Sandwich.
.....	....	.....	4	....	.....	....	92	1	...	...	1	5	... .	St. Thomas.
...	....	.....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.	Sault Ste. Marie.
1	...	7	10	....	11	2	1485	7	16	... .	5	19	2	Toronto.
.....	....	....	2	....	....	....	10	...	....	....	1	2	.....	Walkerton.
.....	....	...	3	....	5	1	28	.	.....	.....	1	1	.. ..	Woodstock.
.....	....	.....	1	....	2	....	34	....	1	.....	....	3	1	Welland.
....	. .	.....	....	....	2	....	10	....	....	1	2	4	.....	Whitby.
														Lock-ups—
.....	....	.....	...	.....	.....	....	5	....	7	1	.....	.....	.....	Bracebridge.
.....	....	.....	.....	.....	.....	....	.....	....	....	.....	.....	.....	.....	Gore Bay.
.....	....	.....	.....	...	.....	....	7	....	.....	.....	.....	.....	.	Little Current.
.....	....	.....	.....	.....	.....	....	14	....	.....	.....	.....	.....	.. ..	Manitowa.
.....	....	.....	.....	...	1	....	10	....	1	.....	.....	.....	.....	Mattawa.
.. ..	.....	.....	.....	11	.....	....	3	....	.....	.....	..	.. .	.....	Parry Sound.
.. .	.....	.....	.....	.....	.....	....	.....	....	.....	.....	.....	.. .	.....	Haliburton.
.....	....	.....	.....	..	.....	....	2	....	.....	.....	.....	....	.....	Minden.
1	12	19	64	30	80	21	3895	25	43	9	35	106	4	Totals.

TABLE

Shewing the offences for which prisoners were *committed*

NAME OF GAOL.	Giving liquor to Indians.	Horse, cattle or sheep stealing.	Housebreaking and robbery.	Indecent assault and exposure.	Inmates and frequenters of houses of ill-fame.	Keeping houses of ill-fame.	Larceny.	Lunatics and persons who were unsafe to be at large.	Manslaughter.	Misdemeanour.	Murder.	Perjury.	Prostitution.
Barrie				1	4	1	23	13	1			1	
Berlin							21	5		1	1	1	
Belleville			1	5			39	10	1	3			
Brantford	3	8		3			45	6				1	
Brampton		4	1				2	1					
Brockville					6	1	17	12			2		2
Cayuga	1	1	1	1			6	6			2		
Cornwall		4	1				9	12					
Cobourg		3					16	11	3		4		
Chatham	1	2					26	3		1			
Goderich		1					8	5				1	
Guelph		2	2			1	21	12		3			
Hamilton			3		11	14	101	11		2	1		
Kingston		1					33	11					
London		3	5	6	16	21	113	28	3		1		
Lindsay							5	5					
L'Orignal							5	2			4		
Milton		1					2	8				1	
Napanee			1	1		3	14	7					
Ottawa			2	5	33	49	98	28		1	3		1
Owen Sound		1					11	7			1		
Orangeville				1			9	4					
Perth							8	9					
Picton							2						
Pembroke							12	2					
Peterborough				3	1		16	17			1		
P. Arthur's Landing	6		5	3	3	2	22				1		
Simcoe		1	1	6		1	11	4		2			
St. Catharines		1	1		1	1	18	7					
Sarnia	1	4	5		3	1	25	12					
Stratford			1	2	1	1	18	8					
Sandwich		4		1	5	4	39	12			3		
St. Thomas	7						33	6					
Sault Ste. Marie							5	3				1	
Toronto		4	28	7	39	29	380	33	2		4	1	
Walkerton		1	2		1		5	3					
Woodstock		2			1		21	9	2		1		
Welland		1			2		10	1		1	1		
Whitby							18	7					
Lock-ups —													
Bracebridge			1				2	1				1	
Gore Bay													
Little Current	1						1						
Manitowaning							1						
Mattawa							5	2					
Parry Sound					3	1	2	1					
Haliburton													
Minden													
Totals	20	49	61	45	130	130	1278	344	12	14	30	8	3

No. 4.—*Continued.*

during the year ended 30th September, 1883.

Rape and assault with intent.	Seduction.	Receiving Stolen goods.	Selling liquor without licence.	Shooting with intent.	Stabbing.	Threatening and seditious language.	Trespass.	Vagrancy.	Want of sureties to keep the peace.	Other offences not enumerated.	Total.	NAME OF GAOL.
2		1	2		1			65	3	4	255	Barrie.
						5		19	1	7	96	Berlin.
		1	1	3				22	1	1	178	Belleville.
1		2					5	31		2	216	Brantford.
			1				1	85		1	109	Brampton.
		2						21	3	117	215	Brockville.
1				1		1		10			42	Cayuga.
		1	1			1		2	1		53	Cornwall.
1								19	6	5	121	Cobourg.
		1				2	6	10	2		117	Chatham.
						3		20		1	58	Goderich.
4							3	29	2	3	187	Guelph.
4	1		5	1		2	10	117	37	58	898	Hamilton.
		1	1			1		43			153	Kingston.
1		6			1	19	11	134		6	806	London.
1								12	1	1	39	Lindsay.
						4		1			23	L'Orignal.
								70	1		97	Milton.
								6	1	3	64	Napanee.
					2			58	1	15	710	Ottawa.
2				1				44	4	3	130	Owen Sound.
1						1		26	1		43	Orangeville.
1			2			1		20	2	2	68	Perth.
								1	1		89	Picton.
3				2				20			78	Pembroke.
				1				23			181	Peterborough.
			5			4	3	5		1	412	P. Arthur's Landing.
				1			2	34	2	2	108	Simcoe.
3				1		1		7	2	3	132	St. Catharines.
								72		1	227	Sarnia.
3			1	2		2	5	25		1	132	Stratford.
2		2		1			4	15		8	262	Sandwich.
1				2		1		15		13	193	St. Thomas.
6								1			24	Sault Ste. Marie.
5		16	7	5	4		65	219	19	17	2633	Toronto.
				1				6		4	47	Walkerton.
1						1	1	102		4	198	Woodstock.
				1			4	99	1	51	235	Welland.
				1				43		8	116	Whitby.
												Lock-ups—
											23	Bracebridge.
												Gore Bay.
						1			8		20	Little Current.
2											21	Manitowaning.
1		5		1				1			37	Mattawa.
		2							1		27	Parry Sound.
											1	Haliburton.
								2			6	Minden.
46	1	33	33	25	8	50	120	1554	101	342	9880	Totals.

TABLE No. 5.

Shewing the total number of prisoners, male and female, *committed* under each offence during the year.

OFFENCES.	Male.	Female.	Total.
Abortion	2		2
Abusive and obscene language	66	21	87
Arson	44	3	47
Assault	542	30	572
Assault, felonious	91		91
Attempted suicide	4	4	8
Abduction	5	2	7
Bigamy	3	3	6
Breaches of the peace	54	5	59
Breaches of by-laws	25	1	26
Burglary	61		61
Carrying unlawful weapons	35		35
Contempt of Court	94	4	98
Counterfeiting and passing counterfeit money		1	1
Cruelty to animals	12		12
Cutting and wounding, and attempting same	19		19
Debtors	64		64
Deserting employment	30		30
Destroying and injuring property	74	6	80
Detained as witnesses	19	2	21
Drunk and disorderly	3247	648	3895
Embezzlement	25		25
Escaping from or obstructing constable	43		43
Escaping from prison	9		9
Forgery	34	1	35
Fraud or obtaining money or goods under false pretences	97	9	106
Gambling	4		4
Giving liquor to Indians	20		20
Horse, cattle or sheep stealing	49		49
Housebreaking and robbery	59	2	61
Carried forward	4831	742	5573

TABLE No. 5.—*Continued.*

Shewing the total number of prisoners, male and female, *committed* under each offence during the year.

OFFENCES.	Male.	Female.	Total.
Brought forward	4831	742	5573
Indecent assault and exposure	42	3	45
Inmates and frequenters of houses of ill-fame	39	91	130
Keeping houses of ill-fame	46	84	130
Larceny	1105	173	1278
Lunatics and persons who were unsafe to be at large	210	134	344
Manslaughter	10	2	12
Misdemeanour	14	.....	14
Murder	26	4	30
Perjury	8	.....	8
Prostitution	.....	3	3
Rape and assault with intent	46	.....	46
Seduction	1	.....	1
Receiving stolen goods	26	7	33
Selling liquor without licence	30	3	33
Shooting with intent	19	6	25
Stabbing	8	.....	8
Threatening and seditious language	47	3	50
Trespass	117	3	120
Vagrancy	1268	286	1554
Want of sureties to keep the peace	95	6	101
Other offences not enumerated	293	49	342
Total	8281	1599	9880

TABLE No. 6.

Shewing the number of prisoners, male and female, *sentenced* during the year ended 30th September, 1883, and a comparison of the same with the previous year.

NAME OF GAOL.	No. of prisoners *sentenced* in the year ended 30th September, 1883.			No. of prisoners *sentenced* in the year ended 30th September, 1882.			Increase.			Decrease.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Barrie	98	20	118	107	15	122	.....	5	5	9	.....	9
Berlin	52	9	61	48	2	50	4	7	11	.....	.....	.....
Belleville	91	13	104	81	22	103	10	.....	10	9	.....	9
Brantford	94	22	116	113	32	145	.....	...	.....	19	10	29
Brampton	24	1	25	34	....	34	.....	1	1	10	.....	10
Brockville	138	32	170	101	24	125	37	8	45	.....	.....	....
Cayuga	17	1	18	25	9	34	.....	.....	.....	8	8	16
Cornwall	24	2	26	30	4	34	.....	....	.....	6	2	8
Cobourg	80	8	88	61	10	71	19	.....	19	.....	2	2
Chatham	73	3	76	94	4	98	.....	...	.....	21	1	22
Goderich	32	10	42	41	9	50	.....	1	1	9	.....	9
Guelph	116	14	130	131	15	146	.....	....	.....	15	1	16
Hamilton	542	104	646	586	154	740	.....	.....	.....	44	50	94
Kingston	114	20	134	71	23	94	43	.....	43	.....	3	3
London	394	73	467	268	51	319	126	22	148	.....	.....	.....
Lindsay	26	3	29	23	4	27	3	.....	3	.....	1	1
L'Orignal	14	1	15	9	.....	9	5	1	6	.....	.....	.....
Milton	33	1	34	40	4	44	.....	.....	.....	7	3	10
Napanee	41	5	46	36	5	41	5	.....	5	.....	.....	.....
Ottawa	335	103	438	266	127	393	69	...	69	.....	24	24
Orangeville	26	6	32	12	2	14	14	4	18	.....	.....	....
Owen Sound	76	3	79	74	3	77	2	.....	2	.....	.....	.....
Perth	42	4	46	24	5	29	18	.....	18	.....	1	1
Picton	12	.....	12	26	1	27	.....	.....	.....	14	1	15
Pembroke	45	4	49	37	3	40	8	1	9	.....	.....	.....
Forward	2539	462	3001	2338	528	2866	363	50	413	171	107	278

TABLE No. 6.—*Continued.*

Shewing the number of prisoners, male and female, *sentenced* during the year ended 30th September, 1883, and a comparison of the same with the previous year.

NAME OF GAOL.	No. of prisoners *sentenced* for the year ended 30th September, 1883.			No. of prisoners *sentenced* for the year ended 30th September, 1882.			Increase.			Decrease.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Brought forward	2539	462	3001	2338	528	2866	363	50	413	171	107	278
Peterborough	154	7	161	104	7	111	50	...	50	...	...	...
P. Arthur's Landing	68	3	71	16	...	16	52	3	55	...	...	...
Simcoe	54	2	56	42	1	43	12	1	13	...	...	...
St. Catharines	91	10	101	66	16	82	25	...	25	...	6	6
Sarnia	155	11	166	169	13	182	...	...	...	14	2	16
Stratford	56	7	63	75	17	92	...	...	...	19	10	29
Sandwich	162	46	208	176	43	219	...	3	3	14	...	14
St. Thomas	124	6	130	122	7	129	2	...	2	...	1	1
Sault Ste. Marie	8	...	8	20	...	20	...	...	...	12	...	12
Toronto	1381	518	1899	1268	525	1793	113	...	113	...	7	7
Walkerton	17	2	19	21	2	23	...	...	...	4	...	4
Woodstock	83	11	94	96	14	110	...	...	...	13	3	16
Welland	162	6	168	114	7	121	48	...	48	...	1	1
Whitby	71	9	80	41	2	43	30	7	37	...	...	...
Lock-up, Bracebridge	1	...	1	17	...	17	...	...	...	16	...	16
" Gore Bay	...	...	...	...	...	...	...	...	...	...	...	...
" Little Current	2	1	3	3	...	3	...	1	1	1	...	1
" Manitowaning	19	2	21	22	1	23	...	1	1	3	...	3
" Mattawa	21	...	21	5	...	5	16	...	16	...	...	...
" Parry Sound	19	3	22	18	...	18	1	3	4	...	...	...
" Silver Islet	...	...	...	...	...	...	...	...	...	...	...	...
" Minden	6	...	6	4	...	4	2	...	...	...	...	...
" Haliburton	1	...	1	...	...	...	1	...	1	...	...	...
Totals	5194	1106	6300	4737	1183	5920	715	69	784	267	137	404

TABLE

Shewing the number of prisoners upon whom sentences were passed, the nature
the County Judges'

NAME OF GAOL.	Total number of prisoners sentenced during the year.			WHERE SENTENCED TO.										
	Male.	Female.	Total.	To Gaol and afterwards transferred to Central Prison.	To Central Prison direct.	To Gaol and afterwards to Female Reformatory.	To Female Reformatory direct.	To Provincial Penitentiary.	To Reformatory for Boys.	To Gaol and there detained until expiration of sentence or payment of fine.	Under 30 days.	30 days and up to 60 days or 2 months, not including the last term.	60 days or 2 months.	Over 2 to 3 months.
Barrie	98	20	118	15	2	2			2	97	49	26	13	7
Berlin	52	9	61	9	9		1	5		37	14	18	2	14
Belleville	91	13	104		11			3		90	19	37	16	11
Brantford	94	22	116		6		3	1	2	104	40	38	10	3
Brampton	24	1	25	2				1		22	6	4	8	4
Brockville	138	32	170		2		5	1	3	159	124	12	8	2
Cayuga	17	1	18					1		17	8	4	2	1
Cornwall	24	2	26		2			2	1	21	7	10	3	1
Cobourg	80	8	88	18				5		65	21	25	11	10
Chatham	73	3	76	4	13		1	4	3	51	36	9	3	6
Goderich	32	10	42		2			1	2	37	16	6	7	3
Guelph	116	14	130	3	10		3	1	1	112	92	5	12	3
Hamilton	542	104	646	47	46	1	20	5	6	527	289	205	47	20
Kingston	114	20	134		19		1	9	4	101	49	27	7	13
London	394	73	467	43	15	2	3	9	9	386	261	61	50	37
Lindsay	26	3	29		1				1	27	11	12	2	
L'Orignal	14	1	15							15	12	1		
Milton	33	1	34		1					33	8	11		9
Napanee	41	5	46		3			3	1	39	24	4	6	1
Ottawa	335	103	438	3	13	2	11	5		404	318	28	33	11
Owen Sound	76	3	79	3	5					71	22	18	8	20
Orangeville	26	6	32	1						31	1	2	7	9
Perth	42	4	46	4	4			1		37	4	11	4	4
Picton	12		12		1			3		8	8			
Pembroke	45	4	49		1			3	2	43	14	8	1	1
Peterborough	154	7	161	4	1			1		155	121	11	3	10
P. Arthur's Landing	68	3	71					1		70	54	4	2	6
Simcoe	54	2	56	1	8			1		46	42	4	2	
St. Catharines	91	10	101	1	12		4	6		78	57	12	7	3
Sarnia	155	11	166		3	1		1	5	156	98	38	8	7
Stratford	56	7	63		1			1		61	39	5	3	12
Sandwich	162	46	208	1	14		6			187	135	33	11	7
St. Thomas	124	6	130	4	8			3		115	50	51		7
Sault Ste Marie	8		8		1					7	5	1		1
Toronto	1381	518	1899	202	54	22	26	24	14	1557	574	941	125	87
Walkerton	17	2	19				1	1	1	16	7	7	1	1
Woodstock	83	11	94	1	7		4	1	3	78	24	16	23	6
Welland	162	6	168	3	7			1		157	33	96	18	8
Whitby	71	9	80	3	5		1	1		70	22	31	13	2
Lock up, Braceb'ge.	1		1							1				
Gore Bay														
Little Current.	2	1	3							3	3			
Manitowaning.	19	2	21							21	20	1		
Mattawa	21		21							21	19		1	1
Parry Sound	19	3	22		1					21	18	3		
Haliburton	1		1							1	1			
Minden	6		6							6	4	1		
	5194	1106	6300	372	282	30	90	105	60	5361	2779	1837	477	348

No. 7.

and periods of such sentences, and the disposal of those who elected to be tried at Criminal Courts.

PERIODS OF SENTENCE.										COUNTY JUDGES' CRIMINAL COURTS.			NAME OF GAOL.
Over 3 to 4 months.	Over 4 to 5 months.	Over 5 to 6 months.	Over 6 to 9 months.	Over 9 months and up to 1 year, inclusive.	Over 1 year and up to 2.	2 years and up to 3 to Penitentiary.	Over 3 years and upwards to Penitentiary.	For any period to the Reformatory for Boys.	Number of prisoners sentenced to death.	Acquitted on trial and discharged from custody.	Found guilty and sentenced.	Total number who elected to be tried.	
1	....	18	1	1	...	..	....	2	....	9	27	36	Barrie.
1	.	3	2	2	...	3	2	...	....	10	27	37	Berlin.
5	3	8	....	.....	2	1	.....	.....	....	6	13	19	Belleville.
7	....	3	9	....	3	.....	1	2	....	9	10	19	Brantford.
1	...	1	....	.....	....	1	.....	.....	....	..	5	5	Brampton.
2	....	18	....	.....	....	1	.....	3	....	.....	10	10	Brockville.
.....	....	2	....	...	...	.....	1	.....	....	5	4	9	Cayuga.
.....	....	.....	....	...	2	.....	2	1	....	2	1	3	Cornwall.
2	....	11	....	1	2	2	3	.....	...	1	10	11	Cobourg.
.....	....	8	....	4	3	4	.....	3	....	3	5	8	Chatham.
2	....	3	....	2	...	1	.....	2	....	1	4	5	Goderich.
3	....	7	....	6	..	1	.....	1	....	3	10	13	Guelph.
9	....	29	...	16	20	.....	5	6	....	4	9	13	Hamilton.
3	3	14	....	2	3	6	3	4	....	1	8	9	Kingston.
9	....	25	2	3	1	1	8	9	....	29	43	72	London.
1	...	.....	....	1	1	.....	.....	1	....	.....	4	4	Lindsay.
.....	....	1	...	.....	....	.....	.....	.....	1	....	2	2	L'Orignal.
1	3	1	....	.....	....	.....	.....	.....	1	1	3	4	Milton.
.....	....	7	....	....	....	1	2	1	....	1	13	14	Napanee.
3	2	18	1	13	6	5	.....	.....	....	9	16	25	Ottawa.
2	....	.....	6	2	1	.....	.....	.....	....	.....	8	8	Owen Sound.
7	1	5	....	.....	....	.....	.....	.....	....	5	5	10	Orangeville.
.....	....	19	1	1	1	1	.....	.....	....	4	1	5	Perth.
.....	....	.....	....	.....	1	2	1	.....	....	.....	1	1	Picton.
5	2	11	....	2	....	2	1	2	....	1	11	12	Pembroke.
1	...	13	....	.....	1	1	.....	.....	....	1	1	2	Peterborough.
1	....	3	....	.....	....	.....	1	.....	....	....	1	1	Prince Arthur's Landing.
.....	....	2	2	2	1	1	.....	.....	....	10	10	20	Simcoe.
5	....	4	2	1	4	5	1	.....	....	1	6	7	St. Catharines.
3	....	5	....	1	....	1	.....	5	....	14	24	38	Sarnia.
1	....	1	....	1	....	1	.....	.....	....	.....	9	9	Stratford.
1	1	11	5	3	1	...	.....	.....	....	10	11	21	Sandwich.
8	1	6	1	3	....	2	1	.....	....	4	10	14	St. Thomas.
.....	....	.....	....	1	....	.....	.....	.....	....	3	4	7	Sault Ste Marie.
25	7	74	4	10	14	15	9	14	....	38	70	108	Toronto.
.....	....	.....	....	.....	1	.....	1	1	....	7	11	18	Walkerton.
2	....	13	1	.....	5	1	.....	3	....	.....	9	9	Woodstock.
3	....	4	1	2	2	.....	1	.....	....	2	10	12	Welland.
4	....	5	....	2	....	1	.....	.....	....	3	6	9	Whitby.
.....	....	1	....	.....	...	.....	.....	.....	....	.....	.....	.....	Lock up, Bracebridge.
.....	....	.....	....	.....	....	.....	.....	.....	..	.....	.....	.....	" Gore Bay.
.....	....	.....	....	.....	....	.....	.....	.....	....	.....	.....	.....	" Little Current.
.....	....	.....	....	.....	....	.....	.....	.....	....	.....	.....	.....	" Manitowaning.
.....	....	.....	....	.....	....	.....	.....	.....	....	4	21	25	" Mattawa.
.....	....	.....	....	1	....	.....	.....	.....	....	.....	.....	.....	" Parry Sound.
.....	....	.....	....	.....	....	.....	.....	.....	....	.....	.....	.....	" Haliburton.
1	....	.....	....	.....	....	.....	.....	.....	....	.....	.....	.....	" Minden.
119	23	354	38	83	75	60	45	60	2	201	453	654	

TABLE

Shewing offences for which prisoners

NAME OF GAOL.	Abortion.	Abusive and obscene language.	Arson.	Assault.	Assault, felonious.	Attempted suicide.	Abduction.	Bigamy.	Breaches of peace.	Breaches of by-laws.	Burglary.	Carrying unlawful weapons.	Contempt of court.
Barrie			2	3	2						2		4
Berlin				9				1		1		1	
Belleville		2		5	2						2		1
Brantford		1		5	2							1	
Brampton		1		2	1		1	1					2
Brockville		2		2					1			1	
Cayuga													
Cornwall				9									
Cobourg		2	2	11	1								2
Chatham				6	2					2			6
Goderich		2		1	1								7
Guelph					3							2	1
Hamilton		7	1	55	6			1		1	3	1	
Kingston				2	2								
London		7		30						4	6	2	7
Lindsay		1		1	2				1			1	
L'Orignal		2		1									
Milton		1		1									3
Napanee		2		2	3								1
Ottawa		10		35					22	5			16
Owen Sound				5									9
Orangeville													
Perth		1		5	1					1			
Picton				4							1		
Pembroke				5								1	3
Peterborough		4	2	19					3	1			
P. Arthur's Landing		1		1	2				9			3	1
Simcoe				2	2							1	5
St. Catharines		1	1	8	2								1
Sarnia		2		4									5
Stratford					3								8
Sandwich		3		10								1	6
St. Thomas				3	2								3
Sault Ste. Marie		2		2						1			
Toronto		11		74	22	1				2	12	6	
Walkerton				3									3
Woodstock			1	7	1			1					
Welland		1		13	1							1	4
Whitby	1			8	1						1		3
Lock-ups, Bracebridge													
Gore Bay													
Little Current													
Manitowaning				4									
Mattawa				5									
Parry Sound				1									
Haliburton												1	
Minden													
Total	1	66	9	363	64	1	1	4	36	18	27	23	101

No. 8.

were *sentenced* during the year.

Cruelty to animals.	Cutting, wounding and attempting same.	Deserting employment.	Destroying and injuring property.	Drunk and disorderly.	Embezzlement.	Escaping from and obstructing constable.	Escaping from prisons.	Forgery.	Fraud, or obtaining money under false pretences.	Giving liquor to Indians.	NAMME OF GAOL.
			1	26							Barrie.
				10							Berlin.
				35				1	3		Belleville.
			3	44	1			1		3	Brantford.
				4							Brampton.
				17							Brockville.
	1		1	4						1	Cayuga.
		1		4							Cornwall.
			4	21					2		Cobourg.
2				16				2	1	1	Chatham.
				3				1			Goderich.
	1			80							Guelph.
	1		1	333	3			1	6		Hamilton.
		3		46			3				Kingston.
2		3	10	168		1		1	3		London.
				5							Lindsay.
			1	2							L'Orignal.
				3							Milton.
				15					1		Napanee.
1	3		2	206		2					Ottawa.
	1	2		4		1			1		Owen Sound.
											Orangeville.
				7							Perth.
				3				2			Picton.
	1			7							Pembroke.
3			9	71		1	1		3		Peterborough.
				38		1					Prince Arthur's Landing.
				4							Simcoe.
				61					1		St. Catharines.
				61						1	Sarnia.
				20					1		Stratford.
			4	120			1		1		Sandwich.
				76	1			1	1	7	St. Thomas.
											Sault. Ste. Marie.
	5		10	1202	2	11		2	10		Toronto.
				1							Walkerton.
			4	19				1			Woodstock.
			2	30		1			4		Welland.
			2	5			1		1		Whitby.
						1					Lock-ups, Bracebridge.
											Gore Bay.
				3							Little Current.
				14							Manitowaning.
			1	1							Mattawa.
		10		3							Parry Sound.
											Haliburton.
				6							Minden.
8	13	19	55	2798	7	19	6	13	39	13	Totals.

TABLE

Shewing offences for which prisoners

NAME OF GAOL.	Horse, cattle or sheep stealing.	Housebreaking and robbery.	Indecent assault and exposure.	Inmates and frequenters of houses of ill-fame.	Keeping houses of ill-fame.	Larceny.	Manslaughter.	Misdemeanor.	Murder.	Perjury.
Barrie			1	3	1	16				
Berlin						17				
Belleville		1	3			28		1		
Brantford	3					22				
Brampton						2				
Brockville				3	1	11			1	
Cayuga						5				
Cornwall	1					7				
Cobourg	3					16	2			
Chatham	1	2				20		1		
Goderich	1					4				1
Guelph	2	2			1	12				
Hamilton		1		8	13	58		3	1	
Kingston	1					31				
London	1	3	4	15	15	66				
Lindsay						5				
L'Orignal						5			1	
Milton	1					1				
Napanee			1		3	11				
Ottawa		2	3	6	33	50		1		
Owen Sound	1					9				
Orangeville			1			5				
Perth						5				
Picton						1				
Pembroke						11				
Peterborough			3	1		16				
Prince Arthur's Landing		1		1	1	6			1	
Simcoe	1		1			6				
St. Catharines				1	1	14				
Sarnia	3	3				18				
Stratford			1	1		11				
Sandwich		1	1	4	3	27				1
St. Thomas						18				
Sault Ste. Marie						1				
Toronto	2	14	5	29	25	230	2			
Walkerton	1					3				
Woodstock	1					14				
Welland	1			1		8				
Whitby						16				
Lock-ups, Bracebridge										
Gore Bay										
Little Current										
Manitowaning						1				
Mattawa					2	5				
Parry Sound				3	1	2				
Haliburton										
Minden										
Total	24	30	26	76	100	814	4	6	4	2

No. 8.—*Continued.*

were *sentenced* during the year.

Prostitution.	Rape and assault with intent.	Receiving stolen goods.	Selling liquor without licence.	Shooting with intent.	Stabbing.	Threatening and seditious language.	Trespass.	Vagrancy.	Other offences not above enumerated.	Total.	NAME OF GAOL.
.....	1	1	1	.....	1	1	.....	45	7	118	Barrie.
.....	.....	.....	.....	.....	.....	2	.....	17	3	61	Berlin.
.....	.....	1	1	3	.....	.....	.....	14	1	104	Belleville.
.....	.....	2	.....	.....	.....	.....	4	21	2	116	Brantford.
.....	.....	.....	1	.....	.....	.....	.....	8	1	25	Brampton.
.....	.....	1	.....	.....	.....	.....	.....	21	109	170	Brockville.
.....	.....	.....	.....	1	.....	.....	.....	4	1	18	Cayuga.
.....	.....	1	1	.....	.....	1	.....	1	.....	26	Cornwall.
.....	.....	.....	.....	.....	.....	.....	.....	19	3	88	Cobourg.
.....	.....	.....	.....	.....	.....	1	6	7	.....	76	Chatham.
.....	.....	.....	.....	.....	.....	2	.....	18	1	42	Goderich.
.....	.....	.....	.....	.....	.....	.....	1	23	2	130	Guelph.
.....	4	.....	5	1	.....	1	6	89	36	646	Hamilton.
.....	1	.....	1	.....	.....	.....	.....	43	1	134	Kingston.
.....	1	.....	.....	.....	1	.....	15	102	.....	467	London.
.....	.....	.....	.....	.....	.....	.....	.....	13	.....	29	Lindsay.
.....	.....	.....	.....	.....	.....	3	.....	.....	.....	15	L'Orignal.
.....	.....	.....	.....	.....	.....	.....	.....	23	1	34	Milton.
.....	.....	.....	.....	.....	.....	.....	.....	6	1	46	Napanee.
.....	.....	.....	.....	.....	.....	.....	1	34	6	438	Ottawa.
.....	.....	.....	.....	.....	.....	.....	.....	44	2	79	Owen Sound.
.....	.....	.....	.....	.....	.....	.....	.....	26	.....	32	Orangeville.
.....	1	.....	2	.....	.....	1	.....	20	2	46	Perth.
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	12	Picton.
.....	.....	.....	.....	1	.....	.....	.....	20	.....	49	Pembroke.
.....	.....	.....	.....	1	.....	.....	.....	23	.....	161	Peterborough.
.....	.....	.....	3	.....	.....	.....	.....	2	.....	71	P. Arthur's Landing.
.....	.....	.....	.....	.....	.....	.....	.....	34	.....	56	Simcoe.
.....	1	.....	.....	.....	.....	.....	.....	6	3	101	St. Catharines.
.....	.....	.....	.....	.....	.....	.....	.....	69	.....	166	Sarnia.
1	.....	.....	1	.....	.....	.....	2	14	.....	63	Stratford.
.....	.....	2	.....	.....	.....	.....	4	15	4	208	Sandwich.
.....	.....	.....	.....	1	.....	.....	.....	12	5	130	St. Thomas.
.....	1	.....	.....	.....	.....	.....	.....	1	.....	8	Sault Ste. Marie.
.....	2	9	6	1	2	.....	55	139	8	1899	Toronto.
1	.....	.....	.....	1	.....	.....	.....	4	2	19	Walkerton.
.....	.....	.....	.....	.....	.....	.....	1	43	1	94	Woodstock.
1	.....	.....	.....	1	.....	.....	3	94	2	168	Welland.
.....	.....	.....	.....	.....	.....	.....	.....	41	.....	80	Whitby.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	Lock-ups, Bracebridge.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Gore Bay.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	Little Current.
.....	2	.....	.....	.....	.....	.....	.....	.....	.....	21	Manitowaning
.....	1	.....	2	1	.....	.....	.....	1	2	21	Mattawa.
.....	.....	.....	2	.....	.....	.....	.....	.....	.....	22	Parry Sound.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	Haliburton.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	Minden.
3	15	17	26	12	4	12	98	1116	207	6300	Totals.

TABLE No. 9.

Shewing the total number of prisoners, male and female, *sentenced* under each offence during the year.

OFFENCES.	Male.	Female.	Total.
Abortion	1		1
Abusive and obscene language	45	21	66
Arson	8	1	9
Assault	339	24	363
Assault, felonious	64		64
Attempted suicide	1		1
Abduction	1		1
Bigamy	2	2	4
Breaches of the peace	36		36
Breaches of by-laws	18		18
Burglary	27		27
Contempt of court	100	1	101
Carrying unlawful weapons	23		23
Cutting and wounding and attempting same	13		13
Cruelty to animals	8		8
Deserting employment	19		19
Destroying and injuring property	49	6	55
Drunk and disorderly	2243	555	2798
Embezzlement	7		7
Escaping from or obstructing constable	19		19
Escaping from prisons	6		6
Forgery	13		13
Fraud and obtaining money under false pretences	36	3	39
Giving liquor to Indians	13		13
Horse, cattle or sheep stealing	24		24
Housebreaking and robbery	28	2	30
Indecent assault and exposure	23	3	26
Inmates and frequenters of houses of ill-fame	24	52	76
Keeping houses of ill-fame	32	68	100
Larceny	718	96	814
Manslaughter	3	1	4
Misdemeanour	6		6
Murder	2	2	4
Perjury	2		2
Prostitution		3	3
Rape and assault with intent	15		15
Receiving stolen goods	13	4	17
Selling liquor without licence	23	3	26
Shooting with intent	7	5	12
Stabbing	4		4
Threatening and seditious language	11	1	12
Trespass	97	1	98
Vagrancy	884	232	1116
Other offences not enumerated	187	20	207
Totals	5194	1106	6300

TABLE No. 10.

Shewing the nationalities, religious denominations, social status, and habits of the prisoners *committed* during the year.

NAME OF GAOL.	Nationalities.						Religious Denominations.					Social and Educational State.					
	Canadian.	English.	Irish.	Scotch.	United States.	Other countries.	Roman Catholic.	Church of England.	Presbyterians.	Methodists.	Other denominations.	Married.	Unmarried.	Neither read or write.	Temperate.	Intemperate.	Total number committed to gaol.
Barrie	101	57	62	16	11	8	62	100	37	39	17	135	120	57	67	188	255
Berlin	45	13	9	9	3	17	17	21	11	13	34	40	56	19	29	67	96
Belleville	99	32	34	5	7	1	62	43	11	60	2	72	106	50	90	88	178
Brantford	139	27	28	7	13	2	44	97	10	42	23	71	145	76	63	153	216
Brampton	24	32	25	14	13	1	27	42	25	7	8	25	84	15	28	81	109
Brockville	117	18	49	8	16	7	102	59	31	16	7	69	146	53	31	184	215
Cayuga	22	3	9	....	6	2	17	9	5	8	3	16	26	8	16	26	42
Cornwall	40	3	5	....	4	1	22	8	14	9	....	23	30	25	26	27	53
Cobourg	65	19	27	3	5	2	39	35	13	29	5	42	79	22	30	91	121
Chatham	68	7	9	6	22	5	35	19	15	37	11	54	63	19	64	53	117
Goderich	25	4	15	13	....	1	7	15	22	7	7	15	43	11	16	42	58
Guelph	69	28	45	29	14	2	66	46	51	18	6	43	144	34	63	124	187
Hamilton	375	140	234	61	64	24	369	252	124	97	56	424	474	157	117	781	898
Kingston	72	15	46	11	6	3	77	35	18	19	4	38	115	38	34	119	153
London	345	159	191	45	60	6	228	325	85	130	38	244	562	64	234	572	806
Lindsay	22	8	6	2	1	..	10	15	6	6	2	6	33	8	20	19	39
L'Orignal	19	2	1	....	....	1	17	2	1	1	2	8	15	5	10	13	23
Milton	25	32	23	14	3	....	11	55	18	11	2	20	77	16	11	86	97
Napanee	43	9	9	1	2	....	11	22	5	22	4	30	34	13	21	43	64
Ottawa	452	70	127	22	28	11	471	149	50	33	7	323	387	489	117	593	710
Owen Sound	53	20	35	7	3	12	26	41	26	11	26	51	79	36	48	82	130
Orangeville	23	8	11	1	....	....	28	8	4	3	....	21	22	11	11	32	43
Perth	39	8	18	2	....	1	18	28	19	3	....	25	43	22	27	41	68
Picton	68	4	13	1	3	....	27	23	9	25	5	58	31	27	8	81	89
Pembroke	56	4	10	1	2	5	44	11	18	1	4	25	53	44	29	49	78
Peterborough	63	27	73	9	3	6	93	34	29	20	5	37	144	62	54	127	181
P. Arthur's Landing	153	68	62	32	50	47	164	97	70	22	59	94	318	82	45	367	412
Simcoe	63	13	14	5	9	4	21	31	9	15	32	32	76	24	35	73	108
St. Catharines	65	10	40	4	13	....	55	40	11	20	6	46	86	22	17	115	132
Sarnia	132	6	65	10	13	1	97	89	24	11	6	66	161	131	75	152	227
Stratford	58	30	22	14	3	5	49	28	25	20	10	63	69	25	74	58	132
Sandwich	85	23	51	13	82	8	84	60	31	47	40	124	138	49	78	184	262
St. Thomas	88	26	35	10	30	4	51	47	26	41	28	67	126	55	42	151	193
Sault Ste. Marie	9	2	4	5	3	1	9	4	5	5	1	10	14	4	14	10	24
Toronto	995	518	777	157	142	44	1063	1006	313	191	60	987	1646	540	473	2160	2633
Walkerton	27	5	7	3	1	4	5	15	12	11	4	26	21	9	28	19	47
Woodstock	74	41	36	28	15	4	40	72	38	29	19	95	103	32	88	110	198
Welland	85	33	66	2	44	5	90	101	14	26	4	72	163	42	47	188	235
Whitby	51	19	29	4	10	3	33	36	30	11	6	33	83	29	38	78	116
Lock-ups—																	
Bracebridge	16	5	1	....	1	....	9	9	....	2	3	9	14	14	20	3	23
Gore Bay	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Little Current	15	3	1	1	....	....	10	6	1	3	....	11	9	8	1	19	20
Manitowaning	19	1	1	....	....	....	16	3	1	1	....	10	11	10	3	18	21
Mattawa	27	2	7	1	....	....	26	10	1	....	....	11	26	20	8	29	37
Parry Sound	12	2	4	8	1	....	4	5	9	8	1	11	16	3	27	....	27
Haliburton	1	....	....	....	....	....	1	....	....	....	....	....	1	1	....	1	1
Minden	4	1	....	1	....	....	2	1	3	....	....	3	3	1	1	5	6
Totals	4448	1557	2336	585	706	248	3759	3154	1280	1130	557	3685	6195	2482	2378	7502	9880

TABLE

Shewing the occupations, trades or callings

NAME OF GAOL.	Agents and Commercial Travellers.	Auctioneers.	Bakers.	Barbers.	Bar-tenders.	Blacksmiths and Boilermakers.	Boot and Shoemakers.	Boys (no occupation).	Brewers and Distillers.	Bricklayers and Bricklayers.	Broom, Brush and Basket-makers.	Butchers.	Cabinetmakers and Upholsterers.	Carpenters and Joiners.	Carriage and Waggonmakers.	Cigarmakers.	Clerks, Bookkeepers and Students.
Barrie	1		1	3		3	10	4	1	3		6		8		1	5
Berlin	1	1				2	2					1		2		1	2
Belleville				1		2	2				1	1		9		2	1
Brantford				1		7	2	6		1		1	1	6			1
Brampton	1					2	2	2						1			
Brockville	1			2			4					1		9		2	
Cayuga				1	1												
Cornwall				1										1			
Cobourg	2		2	3			6					2		9			4
Chatham			1			3	2	2		2				2	4		2
Goderich					1	2		2			1			3			
Guelph	8				2	5	4	3				2	6	5			
Hamilton	6		5	5	1	13	25	46		5	1	5	7	33	4	8	19
Kingston			2			2	2							3		1	1
London	9		2	8	4	9	10	45		12	1	4	11	13	16	19	16
Lindsay	2					1	2	1						1			
L'Orignal			1			2	1	4						2	1		1
Milton							3							2			
Napanee	2						2				1			5		2	
Ottawa	2		1	10		5	16	39		3		10	1	19		1	21
Owen Sound	2					1	2	1		3		1		2	1		
Orangeville			1				2	4									
Perth	1					1	4	1						1			
Picton						4		1		1		2	1	3	1		
Pembroke				1		2								2			
Peterborough			1			3	7	2		3				4			
Prince Arthur's Landing			7			14	2			1		1		6	1	1	6
Simcoe			1	1		2	6			1				5			
St. Catharines				1	1		5	3				5	2	5			4
Sarnia			1			3	3					1		2			
Stratford	2		1	1	1	1	7					2	1	8	3	4	1
Sandwich	2		1	2	1	2	3	2		1			2	7		1	12
St. Thomas			2	4		7	7					3		6	1	2	3
Sault Ste Marie																	
Toronto	43		17	14	2	28	58	76	3	27	8	15	35	76	1	14	90
Walkerton							1	1		1				3			1
Woodstock	3		1	1	1	7	5	3	2	1	2		3	3		2	1
Welland			1	2	1	7	3	1						6			1
Whitby			1	1		2	2	2					3	3	1		
Lock-ups—																	
Bracebridge																	
Gore Bay																	
Little Current																	
Manitowaning																	
Mattawa			1											3			
Parry Sound						1				1				2			
Haliburton																	
Minden														1			
Totals	88	1	51	63	16	143	212	251	6	66	15	63	73	281	34	61	192

No. 11.

of the prisoners *committed* during the year.

Contractors.	Constables.	Coopers.	Dentists.	Doctors and Druggists.	Dressmakers.	Engravers.	Engineers and Machinists.	Farmers and Yeomen.	Gardeners.	Grocers.	Harness and Trunkmakers.	Hatters.	Hotelkeepers and Licensed Victualers.	Householders.	NAME OF GAOL.
....	...	1	....	....	1	....	3	7	2	....	1	2	4	....	Barrie.
....	....	....	....	....	1	....	4	4	....	....	.	....	2	..	Berlin.
....	....	3	....	1	....	....	6	13	1	....	....	....	4	8	Belleville.
....	....	....	...	1	....	....	4	21	....	1	1	....	1	15	Brantford.
....	.	....	....	....	....	...	1	2	1	...	1	1	1	2	Brampton.
...	....	....	....	1	....	....	1	7	....	....	....	....	....	20	Brockville.
....	....	....	....	....	....	....	....	7	2	....	....	....	....	....	Cayuga.
....	....	....	....	2	1	....	...	7	....	....	....	....	1	....	Cornwall.
....	....	1	1	....	....	....	....	....	....	....	....	....	2	1	Cobourg.
....	....	....	....	....	...	3	....	14	1	1	....	....	....	...	Chatham.
....	....	....	....	....	....	....	....	5	1	...	...	....	3	....	Goderich.
....	....	2	....	....	....	6	....	11	2	....		....	1	...	Guelph.
....	....	....	....	4	2	9	....	5	1	1	1	3	2	43	Hamilton.
....	....	1	....	....	1	....	5	8	....	1	1	....	....	....	Kingston.
....	...	6	...	4	4	6	57	....	2	....	3	....	2	31	London.
....	....	....	....	....	....	....	....	7	....	....	....	....	....	....	Lindsay.
....	....	....	....	....	.	..	....	2	...	....	....	....	....	2	L'Orignal.
....	....	3	....	....	....	....	....	2	....	....	1	....	....	....	Milton.
....	....	....	1	1	....	....	1	4	1	....	1	..	....	....	Napanee.
...	....	3	....	....	3	....	2	8	6	....	5	3	26	....	Ottawa.
....	....	4	....	1	....	....	....	17	....	....	....	....	....	....	Owen Sound.
...	....	...	....	....	....	....	....	2	....	....	....	....	....	...	Orangeville.
....	....	....	....	....	....	....	..	7	...	....	....	....	1	....	Perth.
...	....	1	..	....	....	....	....	9	....	....	.	....	....	...	Picton.
....	....	....	....	....	....	....	....	12	....	....	....	....	....	....	Pembroke.
..	....	....	....	....	....	2	....	14	....	....	5	...	....	....	Peterborough.
4	....	1	....	....	....	....	9	5	....	...	1	....	4	....	Prince Arthur's Landing.
....	....	....	....	....	....	....	....	22	....	....	2	....	....	....	Simcoe.
....	....	1	....	....	....	....	....	3	1	....	..	....	....	6	St. Catharines.
....	..	...	....	....	...	....	2	5	....	...	....	..	3	....	Sarnia.
....	....	....	....	....	....	1	....	14	1	....	....	....	....	....	Stratford.
....	....	1	....	1	....	....	7	8	1	....	....	.	1	17	Sandwich.
....	....	2	....	1	....	...	4	17	....	2	1	....	1	....	St. Thomas.
....	....	....	....	....	....	....	....	6	....	....	....	....	....	....	Sault Ste Marie.
...	2	17	....	2	13	5	41	22	16	1	9	4	3	...	Toronto.
....	....	....	....	....	....	....	....	7	....	....	1	1	....	....	Walkerton.
....	....	2	....	1	1	4	....	5	1	....	1	....	....	....	Woodstock.
....	....	....	....	....	....	....	6	14	1	....	....	....	1	....	Welland.
....	....	....	....	....	....	....	2	3	...	1	3	....	....	....	Whitby.
															Lock-ups—
....	....	1	....	....	....	....	....	3	....	....	....	....	....	...	Bracebridge.
....	....	....	....	....	....	....	....	..	..	....	....	....	....	....	Gore Bay.
....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	Little Current.
....	....	....	....	....	....	....	.	2	....	....	....	....	....	....	Manitowaning.
....	...	....	....	....	....	....	1	3	...	....	....	....	....	...	Mattawa.
..	1	....	....	....	....	....	1	....	....	....	....	....	....	....	Parry Sound.
....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	Haliburton.
....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	Minden.
4	3	50	2	20	27	36	157	340	41	8	40	14	63	145	

TABLE

Shewing the occupations, trades or callings

NAME OF GAOL.	Labour.	Lawyers.	Lumbermen.	Masons and Stonecutters.	Merchants and Traders.	Millwrights and Wheelwrights.	Millers.	Moulders.	Pedlars and Hawkers.	Printers.	Plumbers and Painters.	Photographers.	Prostitutes.	Railway Employees.	Sailors and Fishermen.
Barrie	92		1	5	2	1			1		2				2
Berlin	34			4			1	4			1				1
Belleville	77			1	3			1	2	1	3		12		6
Brantford	95			1	1			9			1		3		
Brampton	56							4	1	9					5
Brockville	96			1				5		1	4				4
Cayuga	19			1	2			1							1
Cornwall	20														
Cobourg	57			1				1				1		1	5
Chatham	52			2	2				1	1	1				5
Goderich	23														
Guelph	61			2	1		2	9		2	4				2
Hamilton	328			10	2			17	9	2	29				13
Kingston	48			1	1		1		1		1				17
London	253			2	5		2	21	23	10	23			9	13
Lindsay	19				1										
L'Orignal	4		1					1							
Milton	62										6				
Napanee	25			2	1			1							2
Ottawa	291		5	9					3	6	21		95		1
Owen Sound	60			6	2				2					1	5
Orangeville	27			1											
Perth	37			1				1	1		1				1
Picton	37			10	1			2			1				4
Pembroke	27		8	1							2			2	
Peterborough	113			4			1	3		1	2				
Prince Arthur's Landing	258	2	2	19				2		2	6		5	20	16
Simcoe	39			1	1			1	1	2	2				3
St. Catharines	47						1	1			5		6		16
Sarnia	173			1	2								2		3
Stratford	58			1	1			4	3		2		2	1	1
Sandwich	101			3		2	1		1	2	9		10	2	13
St. Thomas	77							6	2	2	4			8	2
Sault Ste. Marie	8									1					5
Toronto	712		1	27	29			46	52	33	61	5	251	25	30
Walkerton	16			2	2				1						
Woodstock	86							1		1	8				5
Welland	140			3	3			2			2		1	1	18
Whitby	53			1			1	2	1	1	3				4
Lock-ups—															
Bracebridge	7		9							1					
Gore Bay															
Little Current			8		1								1	4	
Manitowaning	2													1	
Mattawa	20													1	
Parry Sound	15													3	
Haliburton			1												
Minden	2														
Totals	3827	2	36	123	63	3	10	145	105	78	204	6	388	79	203

No. 11—*Continued.*

of the prisoners *committed* during the year.

School and Music Teachers.	Servants and Washerwomen.	Tailors.	Tanners and Curriers.	Teamsters, Drivers and Grooms.	Telegraph Operators.	Tinsmiths.	Watchmakers and Jewellers.	Weavers and Woolworkers.	Whitewashers and Plasterers.	Woodturners.	No Occupation.	Other Occupations not enumerated.	Total.	NAME OF GAOL.
2	22	5	...	.....	....	1	....	....	...	4	12	6	255	Barrie.
....	9	1	....	.....	....	1	....	3	1	....	.....	13	96	Berlin.
1	6	.....	....	...	1	....	1	.	...	....	.....	8	178	Belleville.
....	20	1	....	1	....	....	....	....	....	....	9	5	216	Brantford.
....	4	2	....	....	....	....	....	6	....	....	4	1	109	Brampton.
....	17	8	.	... .	..	4	....	1	....	...	.....	25	215	Brockville.
....	.....	.....	....	.....	....	....	....	....	....	....	2	5	42	Cayuga.
3	10	.....	1	.....	....	....	1	4	....	....	1	.....	53	Cornwall.
....	3	3	....	1	...	3	....	...	1	....	3	8	121	Cobourg.
2	7	2	....	1	....	....	2	....	....	....	1	2	117	Chatham.
....	.....	2	....	.....	....	....	....	....	....	....	13	2	58	Goderich.
....	4	3	1	5	....	2	1	2	...	....	19	8	187	Guelph.
8	92	17	1	26	1	4	2	...	5	7	.....	71	898	Hamilton.
1	8	5	1	. ...	2	1	....	....	1	1	33	1	153	Kingston.
1	81	18	3	17	2	4	2	2	2	1	3	15	806	London.
....	4	.....	.	. .	....	....	....	....	....	...	.....	1	39	Lindsay.
....	.....	...	1	....	....	....	....	....	....	....	.....	.....	23	L'Orignal.
...	5	.....	1	....	....	1	..	....	...	...	.....	11	97	Milton.
....	5	1	....	. ...	....	....	....	....	....	....	1	5	64	Napanee.
1	49	4	2	4	....	3	1	2	6	....	2	21	710	Ottawa.
....	4	1	....	1	...	4	....	....	....	....	7	2	130	Owen Sound.
....	2	....	....	....	....	....	....	....	....	....	4	....	43	Orangeville.
1	5	.....	....	1	....	....	....	....	....	....	1	2	68	Perth.
....	2	.....	4	.....	....	....	....	....	....	....	.....	5	89	Picton.
1	.... ..	4	..	. ...	....	....	....	....	....	....	.....	16	78	Pembroke.
....	.....	....	....	.....	....	....	....	3	...	3	8	2	181	Peterborough.
....	.....	.....	....	5	....	2	3	1	....	....	1	5	412	Prince Arthur's Landing.
....	3	3	....	1	1	....	....	....	1	....	3	6	108	Simcoe.
1	2	....	....	4	....	....	....	....	....	....	3	9	132	St. Catharines.
1	. ..	1	1	.....	....	2	....	....	....	....	17	4	227	Sarnia.
....	3	3	....	1	....	....	....	....	....	....	.....	4	132	Stratford.
5	20	3	1	4	1	2	1	...	2	....	6	1	262	Sandwich.
2	9	4	.	.....	....	2	1	....	....	....	4	7	193	St. Thomas.
....	.....	2	....	.....	....	....	....	....	1	...	1	.....	24	Sault Ste Marie.
4	230	53	3	83	5	18	12	7	14	5	224	61	2633	Toronto.
....	..	.....	1	.....	....	..	....	....	....	....	9	...	47	Walkerton.
....	15	5	1	4	...	2	..	1	...	....	14	5	198	Woodstock.
....	7	1	..	2	....	....	....	....	....	....	3	8	235	Welland.
....	1	....	5	3	...	4	....	....	....	....	7	6	116	Whitby.
														Lock-ups :
1	1	.....	....	.....	....	....	....	....	...	....	.....	.....	23	Bracebridge.
....	....	....	....	....	....	....	....	....	....	....	.....	....	....	Gore Bay.
....	.....	.....	....	.....	....	....	1	....	....	....	1	.....	20	Little Current.
....	.....	.....	....	.....	....	....	....	....	1	....	.....	15	21	Manitowaning.
....	.....	.....	....	.....	2	....	....	1	....	....	. .	2	37	Mattawa.
1	....	....	....	....	....	....	....	....	....	....	.....	2	27	Parry Sound.
..	.....	.....	....	.....	....	....	....	....	....	....	.....	.....	1	Haliburton.
....	....	....	...	.....	....	....	....	....	....	....	....	1	6	Minden.
36	660	152	27	164	15	60	28	33	35	21	416	395	9880	

TABLE

Shewing the number of escapes and deaths, the revenue derived from prison and lowest number of prisoners

NAME OF GAOL.	Prisoners who escaped and evaded recapture.	Prisoners who escaped and were recaptured.	Prisoners who died.	Actual cash revenue derived from prison labour.
				$ c.
Barrie			2	
Berlin	1			
Belleville			1	
Brantford			1	
Brampton				
Brockville			2	
Cayuga			2	
Cornwall			2	
Cobourg			2	
Chatham	1		1	
Goderich			1	162 75
Guelph			2	
Hamilton			2	
Kingston			6	
London				
Lindsay			1	
L'Orignal				
Milton	1		3	
Napanee				
Ottawa			1	289 05
Owen Sound			8	
Orangeville			1	
Perth			3	
Picton				
Pembroke			1	
Peterborough			3	
Prince Arthur's Landing	2			
Simcoe			1	
St. Catharines				
Sarnia				
Stratford			1	
Sandwich			2	
St. Thomas	1			
Sault Ste. Marie				
Toronto			7	
Walkerton				
Woodstock	2			
Welland	1	1	1	
Whitby			2	
Lock-ups—				
Bracebridge	2	2		
Gore Bay				
Little Current				
Manitowaning				
Mattawa		1		
Parry Sound				
Haliburton				
Minden				
Totals	11	4	59	451 80

No. 12.

labour, the cost of diet, the accommodation of the various gaols, and the highest in custody during the year.

Cost of daily rations for prisoners.	Are regulations with respect to dietary observed?	Number of cells in each gaol.	Number of distinct corridors or wards in each gaol.	Greatest number of prisoners confined in gaol at any time during the year.	Lowest numbers of prisoners confined in gaol at any time during the year.	NAME OF GAOL.
cts.						
9 1-3	Yes.	24	8	29	12	Barrie.
10 3-4	Yes.	25	5	11	.....	Berlin.
8 1-8	Yes.	18	4	22	6	Belleville.
7 1-5	Yes.	24	6	18	7	Brantford.
8	Yes.	25	4	9	1	Brampton.
6 1-4	Yes.	29	3	34	6	Brockville.
9 1-4	Yes.	14	4	9	1	Cayuga.
12 1-2	Yes.	17	3	5	2	Cornwall.
7 1-2	Yes.	24	5	24	6	Cobourg.
6 1-4	Yes.	26	4	15	2	Chatham.
9	Yes.	12	4	15	2	Goderich.
8	Yes.	36	8	28	3	Guelph.
7 1-4	Yes.	60	6	62	17	Hamilton.
11	Yes.	53	9	23	4	Kingston.
8 1-6	Yes.	57	9	61	24	London.
7	Yes.	18	4	9	.....	Lindsay.
10	Yes.	18	6	7	.....	L'Orignal.
7 1-2	Yes.	23	4	16	.....	Milton.
8 1-2	Yes.	18	4	13	1	Napanee.
7	Yes.	96	8	58	22	Ottawa.
14 1-2	Yes.	31	6	20	4	Owen Sound.
8 1-4	Yes.	23	6	14	6	Orangeville.
8 1-2	Yes.	18	4	20	5	Perth.
6 1-10	Yes.	26	6	8	.....	Picton.
7 1-4	Yes.	24	4	16	6	Pembroke.
13 1-2	Yes.	18	4	23	6	Peterborough.
16	Yes.	15	3	20	1	Prince Arthur's Landing.
8 1-13	Yes.	26	8	10	1	Simcoe.
9	Yes.	40	8	14	1	St. Catharines.
9	Yes.	19	5	20	4	Sarnia.
8 1-2	Yes.	24	6	13	2	Stratford.
8 1-3	Yes.	34	4	33	7	Sandwich.
13	Yes.	16	4	20	4	St. Thomas.
15	Yes.	14	3	7	1	Sault Ste. Marie.
7 1-2	Yes.	184	12	162	86	Toronto.
8 1-2	Yes.	24	8	10	1	Walkerton.
9	Yes.	32	5	29	10	Woodstock.
9	Yes.	40	4	43	3	Welland.
8	Yes.	25	5	15	2	Whitby.
						Lock-ups
30	Yes.	5	4	4	.....	Bracebridge.
.....	.....	5	2	.....	.....	Gore Bay.
30	Yes.	5	2	10	.....	Little Current.
30	Yes.	5	4	4	1	Manitowaning.
30	Yes.	5	1	5	1	Mattawa.
30	Yes.	5	2	9	1	Parry Sound.
30	Yes.	2	1	1	.....	Haliburton.
30	Yes.	6	2	1	1	Minden.
.....	.....	.....	.....	.....	.....	Totals.

TABLE

Shewing the number of prisoners, how maintained, cost of maintenance, and

NAME OF GAOL.	How Maintained.					Gaol	
	Total number of prisoners committed during the year.	Number of prisoners whose maintenance was defrayed by the Province.	Number of prisoners whose maintenance was defrayed by Municipalities.	Number of days custody of Government prisoners.	Number of days custody of Municipal prisoners.	Cost of food, fuel and clothing.	Cost of official salaries.
						$ c.	$ c.
Barrie	255	66	189	2086	4641	2279 00	1744 00
Berlin	96	43	53	761	1041	507 51	1200 00
Belleville	178	82	96	1964	2617	686 00	1400 00
Brantford	216	79	137	1240	3159	1181 09	1650 00
Brampton	109	12	97	442	1081	380 34	1050 00
Brockville	215	31	184	749	4650	853 87	1650 00
Cayuga	42	17	25	634	741	415 92	1185 00
Cornwall	53	31	22	564	493	468 98	1140 00
Cobourg	121	45	76	2178	2197	1390 75	1580 00
Chatham	117	34	83	1037	1398	572 87	1491 00
Goderich	58	9	49	255	2123	663 75	1250 00
Guelph	187	34	153	586	2585	1242 27	1350 00
Hamilton	898	178	720	3678	9892	1500 00	2900 00
Kingston	153	49	104	1098	3625	1755 89	1650 00
London	806	133	673	3142	10904	2138 21	3025 85
Lindsay	39	9	30	222	726	395 58	1180 00
L'Orignal	23	7	16	750	184	309 81	1113 00
Milton	97	5	92	248	1958	219 15	1015 00
Napanee	64	19	45	405	1282	144 36	1043 75
Ottawa	710	104	606	3355	10206	2829 66	2325 00
Owen Sound	130	22	108	1000	3341	1689 92	1750 00
Orangeville	43	12	31	555	2966	728 00	1140 00
Perth	68	14	54	461	3624	820 03	1440 00
Picton	89	17	72	338	202	159 76	860 00
Pembroke	78	25	53	816	2492	342 14	1188 00
Peterborough	181	16	165	585	3857	1148 19	1375 50
Prince Arthur's Landing	412	412	.....	3147	.....	989 15	1120 00
Simcoe	108	32	76	322	1254	443 89	1050 00
St. Catharines	132	32	100	702	1821	675 62	1610 00
Sarnia	227	42	185	977	3167	1832 80	1400 00
Stratford	132	23	109	750	2105	938 32	1250 00
Sandwich	262	64	198	1926	4556	877 14	1771 00
St. Thomas	193	59	134	1538	2401	1028 50	1373 10
Sault Ste. Marie	24	24	.....	1000	.....	401 68	1050 00
Toronto	2633	496	2137	7801	38906	7475 11	8810 60
Walkerton	47	22	25	443	689	393 64	1325 00
Woodstock	198	37	161	2886	4094	2301 07	1800 00
Welland	235	25	210	960	4577	1869 37	1445 76
Whitby	116	54	62	889	1975	316 94	1475 00
Lock-ups—							
Bracebridge	23	23	.....	79	.....	.....	200 00
Gore Bay	.....	.....	.....	.....	.....	.....	.....
Little Current	20	20	.....	93	.....	101 90	200 00
Manitowaning	21	21	.....	166	.....	130 37	200 00
Mattawa	37	37	.....	287	.....	148 05	310 00
Parry Sound	27	27	.....	273	.....	32 00	50 00
Haliburton	1	.....	1	.....	3	.....	150 00
Minden	6	2	4	150	18	4 90	150 00
Totals	9880	2545	7335	53538	147551	44783 50	64935 96

No. 13.

salaries of the various gaol officials for the year ended 30th September, 1883.

Expenditure.					Salaries of				
Cost of repairs.	Total gaol expenditure for the year.	Average cost per prisoner for food, clothing, fuel and repairs.	Average cost per prisoner for salaries and wages.	Average cost per prisoner for entire gaol expenditure.	Gaolers.	Turnkeys.	Matrons.	Gaol Surgeons.	NAME OF GAOL.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	c.	$ c.	$ c.	
485 25	4508 25	10 84	6 84	17 68	800 00	450 00	195 00	200 00	Barrie.
.....	1707 51	5 29	12 50	17 79	560 00	400 00	140 00	100 00	Berlin.
.....	2086 00	3 85	7 87	11 72	600 00	450 00	200 00	150 00	Belleville.
55 39	2886 48	5 72	7 64	13 36	700 00	600 00	150 00	200 00	Brantford.
31 68	1462 02	3 80	9 63	13 43	500 00	400 00	100 00	50 00	Brampton.
.....	2503 87	4 00	7 71	11 71	1000 00	400 00	150 00	100 00	Brockville.
61 40	1662 32	11 37	28 21	39 58	600 00	365 00	80 00	140 00	Cayuga.
.....	1608 98	8 85	21 51	30 36	640 00	300 00	100 00	100 00	Cornwall.
104 00	3074 75	12 35	13 06	25 41	800 00	500 00	200 00	80 00	Cobourg.
68 44	2132 31	5 48	12 74	18 22	650 00	466 00	200 00	175 00	Chatham.
98 32	2012 07	13 14	21 55	34 69	550 00	430 00	150 00	120 00	Goderich.
.....	2592 27	6 64	7 22	13 86	600 00	450 00	200 00	100 00	Guelph.
33 00	4433 00	1 71	3 23	4 94	1000 00	1300 00	350 00	250 00	Hamilton.
278 00	3683 89	13 29	10 78	24 07	800 00	500 00	200 00	150 00	Kingston.
371 45	5535 51	3 10	3 75	6 85	700 00	1642 50	456 25	250 00	London.
20 00	1595 58	10 65	30 26	40 91	500 00	400 00	200 00	80 00	Lindsay.
1 00	1423 81	13 51	48 35	61 86	600 00	363 00	100 00	50 00	L'Orignal.
.....	1234 15	2 26	10 46	12 72	500 00	365 00	100 00	50 00	Milton.
30 00	1218 11	2 72	16 31	19 03	475 00	393 75	100 00	75 00	Napanee.
1409 64	6564 30	5 97	3 27	9 24	500 00	1000 00	325 00	200 00	Ottawa.
.....	3439 92	13 00	13 46	26 46	700 00	500 00	300 00	250 00	Owen Sound.
45 00	1913 00	18 00	26 51	44 51	600 00	400 00	100 00	40 00	Orangeville.
10 00	2270 03	12 21	21 18	33 39	800 00	400 00	160 00	80 00	Perth.
44 87	1664 63	2 30	8 54	10 84	400 00	300 00	100 00	60 00	Picton.
.....	1530 14	4 39	15 23	20 62	575 00	388 00	125 00	100 00	Pembroke.
185 12	2708 81	7 37	7 60	14 97	650 00	400 00	175 00	150 00	Peterborough.
70 18	2179 33	2 57	2 72	5 29	500 00	400 00	120 00	160 00	P. Arthur's Land'g.
129 59	1623 48	5 31	9 72	15 03	400 00	350 00	200 00	100 00	Simcoe.
64 01	2349 63	5 60	12 20	17 80	720 00	390 00	200 00	300 00	St. Catharines.
280 00	3512 80	9 31	6 17	15 48	650 00	400 00	200 00	150 00	Sarnia.
108 12	2296 44	7 92	9 47	17 39	450 00	425 00	250 00	125 00	Stratford.
60 00	2708 14	3 57	6 76	10 33	550 00	821 00	200 00	200 00	Sandwich.
107 68	2509 28	5 90	7 11	13 01	600 00	560 60	100 00	112 50	St. Thomas.
30 05	1481 73	18 00	43 75	61 75	400 00	350 00	100 00	200 00	Sault Ste. Marie.
216 45	16001 56	2 92	3 16	6 08	1500 00	5250 00	500 00	1000 00	Toronto.
9 50	1728 14	8 58	28 19	36 77	650 00	375 00	200 00	100 00	Walkerton.
108 70	4209 77	12 17	9 09	21 26	800 00	500 00	200 00	300 00	Woodstock.
.....	3315 13	7 96	6 15	14 11	600 00	444 76	254 00	150 00	Welland.
158 85	1950 79	4 10	12 72	16 82	850 00	300 00	125 00	200 00	Whitby.
									Lock-ups—
.....	200 00	. . .	8 69	8 69	200 00	....	.....	.. ..	Bracebridge.
.....	.....	.....	.....	.....	.....	.....	.....	.....	Gore Bay.
1 50	303 40	5 17	10 00	15 17	200 00	.....	.....	.. ..	Little Current.
.....	330 37	6 21	9 52	15 73	200 00	.....	.. ..	.....	Manitowaning.
28 01	486 06	4 76	8 38	13 14	300 00	.....	....	10 00	Mattawa.
.....	82 00	1 19	1 85	3 04	50 00	....	.....	....	Parry Sound
... .	150 00	..... .	150 00	150 00	150 00	....	....	.....	Haliburton.
1 00	155 90	98	25 00	25 98	150 00	.....	.....	.....	Minden.
4706 20	114425 66	5 09	6 57	11 66	26720 00	24129 61	7365 25	6347 50	Totals.

TABLE No. 14.

Shewing the daily cost per prisoner in each of the gaols, excluding the district lock-ups, for the year ending the 30th September, 1883.

NAME OF GAOL.	Number of prisoners committed during the year.	Total days stay of prisoners during the year.	Cost of fuel, food and clothing.	Average cost per day for each prisoner.
			$ c.	c.
Barrie	255	6727	*2279 00	33·88
Berlin	96	1802	507 51	28·17
Belleville	178	4581	686 00	14·98
Brantford	216	4399	1181 09	26·85
Brampton	109	1523	380 34	24·97
Brockville	215	5399	853 87	15·82
Cayuga	42	1375	415 92	32·50
Cornwall	53	1057	468 98	44·37
Cobourg	121	4375	†1390 75	31·79
Chatham	117	2435	572 87	23·52
Goderich	58	2378	663 75	27·91
Guelph	187	3171	1242 27	39·17
Hamilton	898	13570	1500 00	11·05
Kingston	153	4723	1755 89	37·18
London	806	13645	2138 21	15·66
Lindsay	39	948	395 58	41·73
L'Orignal	23	934	309 81	34·24
Milton	97	2206	219 15	9·93
Napanee	64	1687	144 36	8·56
Ottawa	710	13561	2829 66	20·86
Owen Sound	130	4341	1689 92	38·93
Orangeville	43	3521	728 00	20·67
Perth	68	4085	820 03	20·32
Picton	89	540	159 76	29·59
Pembroke	78	3308	342 14	10·34
Peterborough	181	4442	‡1148 19	25·85
Prince Arthur's Landing	412	3147	989 15	31·43
Simcoe	108	1576	443 89	28·17
St. Catharines	132	2523	675 62	26·77
Sarnia	227	4144	1832 80	44.23
Stratford	132	2855	938 32	32·87
Sandwich	262	6482	877 14	13·53
St. Thomas	193	3939	1028 50	26·11
Sault Ste. Marie	24	1000	401 68	4·17
Toronto	2633	46707	§7475 11	16·04
Walkerton	47	1132	393 64	37·78
Woodstock	198	6980	2301 07	33·25
Welland	235	5537	1869 37	33·76
Whitby	116	2864	¶316 94	11·06
Totals	9753	199619	44366 28	22·22

* Includes cost of an entirely new stock of clothing, bedding and furnishings.
† Includes part of cost of fuel used in the previous year.
‡ Includes additional supply of wood; also an old account for supplies extending over three years.
§ Fuel account not included. Bread contract let at lower figure.
‖ Includes more than the year's supply of fuel.
¶ Cost of heating not included.

SEPARATE REPORTS UPON COMMON GAOLS.

Barrie Gaol.

	1881.	1882.	1883.
Prisoners committed during the year	227	248	255
Greatest number confined at any one time	28	31	29
Number of re-committals.....	47	45	44
Total cost of maintaining gaol.....	$3,130.07	$3,710.35	$4,508.25

My first inspection of this gaol during the official year was made on the morning of the 8th March. I therein found eighteen persons, thirteen of whom were adult males, one was a youth, and four were females. The majority of the males and all the females had been sentenced for vagrancy and other minor offences.

The gaol throughout was clean and tidy, but in one or two places was dilapidated and in need of repairs. This was specially noticeable as regards the floor of the dining-room, and the Sheriff was desired to call the attention of the Council to its condition, with a view to having it relaid.

The north ward of this gaol, being the original structure, is now used for the female prisoners. In some respects, especially in heating and ventilation, this part of the gaol is very defective. With a northern exposure and no appliance for heating, it is evident that such a place is quite unfit for sheltering the old, sick, and infirm vagrants so often committed to goal. Two of the females in custody at the time of my visit were of this class, and one of them was bedridden and occupied a cell in the corridor referred to, with no means of heating it. The Sheriff was therefore requested to call the attention of the County Council to this matter, so that the heating and ventilating of this portion of the gaol might be immediately effected.

Berlin Gaol.

	1881.	1882.	1883.
Prisoners committed during the year....	97	83	96
Greatest number confined at any one time	14	14	11
Number of re-committals.....	30	26	38
Total cost of maintaining gaol.....	$1,647.14	$1,609.33	$1,707.51

The following is Dr. O'Reilly's report to the Hon. the Provincial Secretary:—

"I inspected the Berlin goal on the 29th May. There was then only one prisoner in custody, namely, a female under sentence for bigamy, and who was awaiting removal to the Reformatory for Females.

"This gaol has been painted and cleaned up throughout, and now presents a very tidy appearance. The whole interior is in excellent order. Outside, I regret to say, the wooden fence which divides the female airing ground from the general goal yard, and to which I called attention in my report of last year, is still in the same dilapidated condition.

"A short time previous to this visit a male prisoner had escaped by climbing over the wall. This he was able to do by piling up several buckets and a short bench, which he took into the yard from the corridor. On enquiry it was found that the door leading to the yard had been left open on a Sunday while the turnkey went to Sunday School, and the gaoler was not in attendance.

"This escape was due entirely to a laxity of attention on the part of the officers of the goal, and it is to be hoped that the like will not occur again."

The gaol was again inspected during the year by Dr. O'Reilly and the following report made upon it:—

"My second inspection of the Berlin gaol was made on the 3rd September. Seven men and one woman were in custody. The latter was under sentence for drunkenness. Of the males, one was waiting trial for forgery, one had been sentenced to two years in the Kingston Penitentiary and was waiting transfer thereto, two had been committed as insane, and three were under sentence for vagrancy and drunkenness.

"The wooden flats used in this gaol for bedsteads are very unsatisfactory, great difficulty being experienced in keeping them free from vermin, and it would be a great improvement if proper iron bedsteads were substituted.

"The fence dividing the female airing court from the work yard was still in the same dilapidated condition. The attention of the authorities was once more called to it.

"I found the books to be satisfactorily kept and to contain all the information required."

BELLEVILLE GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	143	208	178
Greatest number confined at any one time	22	20	22
Number of re-committals.....	103	69	62
Total cost of maintaining gaol.....	$2,125.66	$2,198.60	$2,086.00

On the 3rd April I visited this gaol, when I found twenty-one prisoners within its walls, seventeen of whom were males and four were females. The former had been committed for offences of arson, larceny, receiving stolen goods, drunkenness, etc. The women were all under sentence for vagrancy. The gaol records shew that two of them had been committed for an extraordinary number of times since 1864, namely, eighty-nine and ninety-five respectively.

A close inspection of the gaol and premises shewed that efficient supervision was exercised by the gaol officials. Every apartment was in excellent order. The books were well kept, and the gaol regulations appeared to be strictly observed in all maters which came under my notice.

I made a second inspection on the 18th July. The gaol was then in good order, and there were indications of a proper discharge of duty by the gaoler and his assistants.

Eight male prisoners and one female were in custody. Two of the former were waiting trial for indecent assault and larceny respectively, four were under sentence for minor offences, and two had been committed as lunatics. Of these, one had very much improved since his commitment, and it appeared probable that in a short time he might be discharged. The other had been fully certified to and was waiting removal to the Asylum.

The female had been committed as a lunatic. Her case appeared to be a distressing one, and one requiring attention. Her removal to the Asylum was therefore recommended.

BRANTFORD GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	249	252	216
Greatest number confined at any one time	23	29	18
Number of re-committals.....	110	127	105
Total cost of maintaining gaol.....	$2,763.92	$3,127.19	$2,886.48

An inspection of this gaol was made by Dr. O'Reilly on the 9th March. A copy of his report to the Hon. the Provincial Secretary upon it is annexed :—

"At the time of my inspection of the Brantford gaol there were twelve male prisoners. Three of these were under sentence for larceny, three for assault, five for vagrancy and drunkenness, and one was on remand charged with embezzlement.

"The gaol was found to be clean and in good order. The books also were properly kept."

A second visit was made to the gaol by Dr. O'Reilly during the year, and the following report sent in to Government, viz.:—

"I inspected the Brantford gaol on the 20th August. There were twelve prisoners in custody, eight males and four females.

"Of the males, one was waiting trial for embezzlement; one was under sentence of sixty days for selling liquor to Indians; and another for larceny. All the others were undergoing short sentences for vagrancy and drunkenness.

"The four female prisoners were all of the vagrant class, and all under sentence.

"This gaol has sustained a severe loss in the death from typhoid fever of Mr. A. S. Keachie, after a short illness. He had served many years in the capacity of turnkey, and had acquired for himself a high reputation as a good officer, as well as the respect of all who knew him. The position thus vacated has been filled by the appointment of Mr. Keachie's brother, and I am happy to say that arrangements have been made by which the services of the widow of the late turnkey, as matron of the gaol, will still be retained.

"This death from typhoid fever led me to ask the Gaol Surgeon for a special report on the sanitary condition of the gaol; I also made very careful enquiries on the occasion of this visit in regard thereto. The Gaol Surgeon reported that he had thoroughly investigated the causes of Mr. Keachie's illness, and, in his opinion, it was in no way to be attributed to defective sanitation in the gaol. I find, however, that there is no sewerage system in the city of Brantford, and consequently there is no means of draining the gaol, except into cesspools which must be on the premises, and as the gaol is situated in the very heart of the city these cesspools are necessarily very close to the building. It has been the practice to dig a cesspool, and, when filled, to cover it up and dig another. In this way the yards of the gaol have become pretty well honeycombed with old cesspools; and it seems almost too much to believe that there can be a healthy atmosphere where this state of things exists.

"Until a system of sewerage is adopted in the city which will afford means for the proper draining of this gaol, I am very strongly of the opinion that the use of cesspools should be discontinued and earth closets established instead. This view of the case was very strongly commended to the consideration of the gaol authorities."

Brampton Gaol.

	1881.	1882.	1883.
Prisoners committed during the year	185	137	109
Greatest number confined at any one time	14	13	25
Number of re-committals	102	66	52
Total cost of maintaining gaol	$1,481.30	$1,452.31	$1,463.02

This gaol was inspected by Dr. O'Reilly, who made the following report :—

"An inspection of the Brampton gaol was made on the 17th August, when there were only three prisoners, all males, in custody. One was waiting

trial for forgery, another was under sentence for larceny, and the third, a lad, had been sentenced for breaking railway car windows.

"The gaol was found to be in good order, and the books were fairly well kept. Three cases of punishment had been recorded since the last inspection. Upon enquiry, it seems to have been judiciously administered."

BROCKVILLE GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	170	188	215
Greatest number confined at any one time .	25	30	34
Number of re-committals	84	82	81
Total cost of maintaining gaol	$2,457.07	$2,539.27	$2,503.87

I inspected this gaol on the 14th May. I found the books all correctly and neatly kept. The Surgeon's diary shewed special care. Full records were made of all visits, and apparently every prescription ordered was entered.

There were in custody eight males and nine females. All were under sentence except three. Of these, two were lunatics, one, a female, waiting removal to an asylum, and the other waiting examination by the proper authorities.

A thorough inspection of the gaol premises shewed that every part was in good order, after the usual spring cleaning.

On the 21st September, I made a second inspection of the Brockville gaol. There were twenty-nine prisoners in custody—twenty-one males, eight females. Of the former, seven were committed for larceny, two of whom were under sentence for short periods; three had been committed as lunatics and one as an idiot. The others had been sentenced for drunkenness, vagrancy, and minor offences. One of the females had been committed for larceny, the others for vagrancy and drunkenness.

An examination of the books shewed them to be in a satisfactory condition.

Nothing had occurred since the date of my previous visit demanding a further or extended notice.

CAYUGA GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	48	50	42
Greatest number confined at any one time .	8	14	9
Number of re-committals.....	14	7	10
Total cost of maintaining gaol	$1,579.96	$1,643,84	$1,662.32

Dr. O'Reilly visited this gaol, and reported upon it as under:—

"I made an inspection of the Cayuga gaol on the 12th June, and found four male prisoners in custody—no females.

"One of the prisoners was under sentence for injury to property; another for cutting and wounding, and another for vagrancy. The fourth was awaiting trial for indecent assault.

"This gaol, in every part, was found to be well kept in all respects, so far as the gaoler's duties are concerned; but on the day of my visit, bad odours were perceptible through the whole upper part of the gaol. On enquiry, this was found to proceed from a water-closet, which, though in the gaol building, is attached to the court-room, and is in daily use, without being properly ventilated or having a proper supply of water. It would be better that this closet should be kept closed, except during the sessions of the court. The Sheriff was desired to take such steps as he might deem advisable to remedy this defect.

"It has previously been recommended that a door be placed in the wall, to give egress from the entrance yard of the gaol into the open yard in rear of the gaoler's house, and to avoid the necessity of carrying through it the washing from the laundry. This door would be a convenience to the officers of the gaol, and I see no objection to its construction."

A second inspection was made by Dr. O'Reilly, and the following minute recorded:

"The Cayuga gaol was inspected by me on the 5th September. There were six male prisoners in custody. One of the prisoners was waiting trial for larceny, another for stabbing. The others were vagrants and drunkards.

"It was found that the bad odour arising from the defective water-closets, which was noticed at my previous visit, still existed. The condition of these closets is such that some action must be taken immediately to provide a remedy. In addition to this very defective sanitary condition, one of them is so constructed that there is only a thin brick wall between any prisoner who has access to it, and liberty. With all the locks, bars and bolts in the gaol, this wall, which might almost be kicked down by a robust person, affords an easy means of escape. It is to be hoped that this state of things will not be allowed to exist a longer time than that needed in which to effect a change."

Cornwall Gaol.

	1881.	1882.	1883.
Prisoners committed during the year....	44	50	53
Greatest number confined at any one time	8	7	5
Number of re-committals.....	10	7	21
Total cost of maintaining gaol.....	$1,683.83	$1,572.94	$1,608.98

Two inspections of this gaol have been made during the year.

I made the first on the 12th May, finding only one male prisoner in custody. He was under sentence to two months' imprisonment for assault.

The books were well kept. The Surgeon's diary contained records of frequent visits.

The gaol, in all its departments, was thoroughly clean and tidy, needing no further comment as to its condition.

The second inspection, I made on the 27th September, when I found only one male and one female in custody. Both of these persons had been committed as being insane and dangerous to be at large. Their appearance at the time of my visit did not indicate any violent condition. They will, however, be removed to the Asylum, so soon as a vacancy occurs.

The gaol throughout was in excellent order and thoroughly clean. The books were written up to date.

Cobourg Gaol.

	1881.	1882.	1883.
Prisoners committed during the year....	114	100	121
Greatest number confined at any one time	18	22	24
Number of re-committals.....	36	31	32
Total cost of maintaining gaol.....	$3,640.36	$2,587.63	$3,074.75

I visited the Cobourg gaol on the 15th May, when there were in custody nine males and one female. The latter was under sentence for six months' imprisonment for arson. Of the former, one was under sentence for stabbing and

three for larceny, one had been committed on a charge of murder, two were charged with assault, one was detained for want of sureties to keep the peace, and one was committed as insane, but had not been examined.

The gaol had just received its spring cleaning, which had been done in a thorough manner, and all parts were found to be neat and in excellent order.

The books were entered up to date. The Surgeon's diary shewed regular visits and carefully written prescriptions.

The matron was informed that any order for clothing for female prisoners would be attended to if sent to the Reformatory for Females, where such clothing is manufactured.

Mr. Hayes made the second inspection. A copy of his report is appended:—

"I beg to state that, in accordance with your instructions, I inspected the Cobourg Gaol on the 6th September. I found thirteen males and two females in custody. The latter were under sentence for vagrancy and prostitution respectively. Of the former, three were waiting trial for rape, forgery, and for obtaining money under false pretences; four were under sentence for drunkenness, three for assault, one for vagrancy and one for destroying property. One had been committed for want of sureties and subsequently a further warrant committing him as a lunatic was issued. The gaol Surgeon, however, does not consider him dangerous to be at large.

"I saw all the prisoners. A complaint was made by one of them that the changes in dietary, as set forth in the rules, were not followed. On enquiry, I found that a contract to supply certain daily rations had been let before the new rules came into force and that the term of it will not expire until March, 1884. The Sheriff was requested to bring this matter before the County Council with a view to having it set right.

"The gaol was in its usual good condition of order and cleanliness.

"I am told that religious services are held in the gaol twice on each Sunday."

CHATHAM GAOL.

	1881.	1882.	1883.
Prisoners committed during the year.....	102	148	117
Greatest number confined at any one time	15	16	13
Number of re-committals.....	28	34	5
Total cost of maintaining gaol.....	$2,008.00	$2,001.61	$2,132.31

A copy of the report made by Dr. O'Reilly, upon his first inspection of this gaol is annexed:—

"On the day I visited Chatham Gaol (19th June) there were five prisoners, all males, in custody.

"One of the prisoners was under sentence for infraction of the liquor laws: two were under sentence for larceny and one for vagrancy. The other was waiting trial for forgery.

"The gaol was found to be in excellent order in all respects.

"By invitation of the Chairman of the Gaol Committee, I made an inspection of the gaoler's residence, attached to the gaol. It is a one-storey brick cottage, placed close under the walls of the gaol, and sits low upon the ground, causing it to be very damp. In its present condition it is quite unfit for occupation, and, as a matter of fact, both the gaoler and his wife (who is the matron) are suffering in health in consequence, as the gaol Surgeon says, of this dampness. Besides being unhealthy, the house is entirely too small for the needs of the gaoler and his family.

"A project was therefore discussed for the erection of a new house for the gaoler, and the conversion of the old one into a gaol kitchen, laundry, and other offices. Apart from the necessity which exists for providing other accommodation for the gaoler, the offices above referred to are very much needed to make the gaol complete in all departments. It is strongly recommended that as little time as possible be lost in making these changes."

The gaol was again visited by Dr. O'Reilly in August, and the following report made by him to the Provincial Secretary:—

"A second inspection of this gaol was made on the 29th August.

"There were on that date eight male prisoners in custody: no females. It is some months since there has been a female prisoner in this gaol.

"Two of the prisoners were waiting trial—one for burglary and the other for fraud. One was under sentence for six months to the Central Prison for larceny. Another had been sentenced to the Penitentiary for the same offence and was awaiting removal. Two others were under sentence to the Common Gaol for vagrancy and drunkenness. As to these latter, the gaoler was instructed to report them for removal to the Central Prison.

"The others were minor offenders, with the exception of one who was held under the Debtors' Act.

"There is no work at this gaol of any kind for prisoners, except the ordinary work of keeping the gaol clean, and hence the necessity for removal to the Central Prison of prisoners whose sentences are sufficiently long.

"The gaol was found to be in excellent order. The books were examined and found to be correct. The Physician's journal is not in accordance with the regulations; it is an old gaol register, entirely unfit for the purpose and its use should be discontinued. The Sheriff will please provide the gaol Surgeon with a proper journal, so that his records may be kept in accordance with Rule No. 33.

"On this occasion enquiry was made into the circumstances attending the recent escape of a prisoner. It appears that while the turnkey had this prisoner, with others, in the yard for exercise, he (the turnkey) was alarmed by the outcry of a lunatic, who was confined in a corridor adjacent to the yard, and on going into the gaol for a moment, to see what was the matter, he was at once attacked by the lunatic. Before he could get him quieted, and return to the yard again, which was but a few moments, the prisoner had made good his escape over the wall.

"The turnkey ought not to have left his post in the yard, even for a moment, as such action was contrary to Rule 41; but, under the circumstances, I considered there was some slight excuse for his doing so.

"The prisoner was enabled to make his escape by climbing up the bars of the window, and thence by the assistance of a strong galvanized-iron ventilating pipe, which crosses that corner of the yard, and a ledge in the wall, he scaled the top.

"On examining the place where the escape was made it appears that the wall can be scaled at that point quite easily. The ventilating pipe mentioned stands out about a foot or so from the wall and makes the ascent to the top—by an active man—comparatively easy. Attention has been called to the objectionable position of this pipe before, but without results.

"I must now, therefore, insist upon its removal without delay, and the Sheriff is instructed to see that this is done, and also that the ledge in the gaol wall is pointed off with a mixture of mortar and glass in such a way as not to afford assistance again to a prisoner in escaping."

GODERICH GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	104	87	58
Greatest number confined at any one time	24	18	15
Number of re-committals	46	27	22
Total cost of maintaining gaol	$2,021.34	$2,034.81	$2,012.07

A copy of Dr. O'Reilly's report to Government on this gaol is appended, viz:

"I made an inspection of the Goderich gaol on the 23rd June.

"There were seven male and two female prisoners in custody. One of the males is an imbecile, and is kept in gaol so that he may be out of harm's way. Another is an aged man suffering from an incurable disease; he is held as a vagrant. Efforts are being made by the county officers to have him removed to some more fitting place. Another prisoner is under sentence of fifteen months to the Central Prison for larceny. Another is detained as a debtor. Two others are vagrants, and one lad, who is on remand charged with larceny, seems to be an incorrigible youth. His case is under the consideration of the County Judge. The two female prisoners are vagrants. One of them is a very old woman, and both are unfit to take care of themselves, and yet all that can be charged against them is poverty, and it seems hardly fitting that they should be confined as criminals. The books were examined and found to be correct.

"The gaol is thoroughly clean and well-kept. In one yard I saw some boxes and loose lumber lying about, which were ordered to be removed. The absence of bedsteads from this gaol is a noticeable feature. The beds are laid upon shelves against the wall of the gaol. These shelves are entirely unfit for sleeping purposes; in fact, shortly before this visit a woman had rolled off one of these shelves, hurting herself very severely. I strongly recommend the removal of these fixtures and the substitution therefor of proper iron bedsteads. The expense would not be great, and a crying want would be supplied."

The gaol was again inspected by Dr. O'Reilly on the 4th September. The following is the minute he made of his visit, viz:—

"Six male and two female prisoners were found in custody. Of the former, one was on remand charged with using profane language; another, an old man, very ill with an incurable disease, has been for many months in this gaol and is slowly dying. His case is a very painful one, and I believe that efforts have been made by the county authorities to obtain his removal to a hospital, but so far without result. It is a burning shame that this aged man, whose only crime is his poverty, should be left to die a lingering death in a common gaol, for want of any other accommodation for him. Another prisoner has been committed, charged with insanity. He is a harmless idiot, and will be removed to the Orillia Asylum when accommodation can be found for him. Another prisoner was detained for want of sureties to keep the peace. The other two prisoners were vagrants.

"Both the female prisoners were under sentence for vagrancy. One of them was feeble-minded and unfit to take care of herself.

"I was pleased to find that an old shed in the yard, which had long been a just cause for complaint on the part of the gaol officers, had been removed, and that properly constructed water-closets had been built in the yard, thus effecting a great improvement.

"The gaol was in its usual state of good order."

GUELPH GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	134	192	187
Greatest number confined at any one time	12	20	28
Number of re-committals	28	12	34
Total cost of maintaining gaol.....	$2,229.12	$2,974.09	$2,592.27

Two inspections were made by Dr. O'Reilly. His report upon the first was as follows:—

"The Guelph gaol was inspected by me on the 9th May. There were then in custody six male and one female prisoners. The woman had been committed for vagrancy, and was an old resident of the gaol. The only prisoner of importance was a man committed for obstructing a train. Of the others, one was a vagrant under sentence for two months, and the rest had been sentenced to ten days each for drunkenness.

"The commitments to the gaol up to this date number 108 as compared with 133 during the corresponding period of last year.

"The gaol and premises were in fairly good order and cleanly. The books were examined and found to be correct."

The following is the minute made by Dr. O'Reilly of his second visit, viz:—

"On inspecting the Guelph gaol on the 21st August, I found ten prisoners in custody, namely, six males and four females.

"One of the male prisoners is an idiotic person charged with obstructing the railway. He is held for disposal by the Court. One man was under sentence for horse-stealing, one for want of sureties to keep the peace, and one was on remand on a charge of libel. The other two were vagrants.

"Of the females, one was a lunatic who will be removed to the asylum at once, one was under sentence for larceny, and the other two were vagrants.

"The gaol was examined throughout, and found to be in fairly good order. The books were properly kept.

"There is a serious defect in the heating arrangements of this gaol. The male side of the gaol is properly heated by hot-air apparatus, but this apparatus is not extended to the female side, and wood stoves are used instead. These stoves are dangerous as well as troublesome, and do not at any time give that steady heat to the corridors which is desirable. The extension of the hot air system to every part of the gaol is strongly recommended to the gaol authorities."

HAMILTON GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	819	958	898
Greatest number confined at any one time	63	61	62
Number of re-committals	439	544	507
Total cost of maintaining gaol.....	$4,500.00	$5,600.00	$4,433.00

The report made by Dr. O'Reilly upon this gaol is given hereunder:—

"The first inspection of the Hamilton gaol during the year was made on the 8th May. The unprecedentedly small number of twenty-four prisoners, fifteen males and nine females, was found in custody, none of whom had been charged with very serious offences. Of the males, a very old and decrepit man was under sentence for six months for the larceny of some articles of clothing, one was undergoing a month's sentence for a misdemeanour, another a ten days' sentence for assault, four were vagrants, and eight had been sentenced for drunkenness for periods of from ten to thirty days.

"One of the females had just been committed as a dangerous lunatic, and was waiting the issue of the necessary certificates of insanity to enable her being transferred to an asylum. One woman was serving out a sentence of three months for bigamy. Another was under sentence for six months for larceny, and another for twenty days for non-payment of costs. The other five prisoners had been sentenced for vagrancy and drunkenness.

"One of the male prisoners charged with vagrancy was a lad of twelve years of age, who appeared to have run away from his home in the State of Ohio. It was learned that the Gaol Surgeon and Chief of Police were interesting themselves in the boy, with a view to having him restored to his friends.

"My visit extended over the dinner-hour, and I saw both the male and the female prisoners at dinner. The food was of good quality and well-prepared, and there were no complaints in regard to it, or to any other matters affecting the prisoners.

"A thorough inspection was made of the whole building, and it was found to be in all parts thoroughly clean and in good order."

The following minute was recorded by Dr. O'Reilly after his second visit to this gaol:—

"The Hamilton gaol was again inspected by me on the 18th September. There were forty-two prisoners in custody, thirty-four males and eight females. One of the males was an infant formally committed with his mother.

"Of the men, eight were waiting trial for robbery and assault, and four for larceny, rape, forgery, and arson respectively. One was under sentence for larceny and another for a breach of the Fishery Act. Two were under sentence to the Central Prison for wounding with intent and for keeping a disorderly house respectively. One was held on a charge of insanity, and two were on remand charged with larceny. The others were undergoing short sentences for minor offences.

"Of the women, five were waiting trial for slight offences, and one for child murder. One, a vagrant, was on remand, and the other was charged with insanity, and will probably be found to be an imbecile.

"With the exception of the ordinary work of cleaning the gaol, there is no employment at all for the prisoners sentenced to hard labour, although no less than fifteen of them were so sentenced and able to work. There is, therefore, a condition of idleness existing throughout the gaol which render the duties of the officers more onerous than they should be, and lowers the moral tone of the prisoners.

"The manner in which this gaol is managed in all its departments is highly commendable."

KINGSTON GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	182	125	153
Greatest number confined at any one time	39	21	23
Number of re-committals	43	18	19
Total cost of maintaining gaol	$3,882.51	$3,796.88	$3,683.89

The following is a copy of the minutes made by me, of my first inspection of this gaol during the official year, viz:—

"At the time of my visit to the Kingston gaol to-day (17th November), there are nine male and four female prisoners in custody, all of whom, except two, are under sentence for drunkenness and vagrancy.

"The register, and the dietary, labour, account, punishment and Surgeon's books are found to be neatly kept and entered up to date.

"The interior of the gaol is in excellent condition, with the exception of one ward, where two old men are kept, whose physical ailments and habits are such as to produce the most disagreeable smell. They are not at all proper inmates of a gaol.

"In view of a recent escape from the yard of the gaol, I have made a careful inspection of the yards and structures therein, and I find that the coal-shed and well-house in the yard are each too high, as they intercept a view of the coping of the wall from points at quite a distance from either of those structures. These buildings should therefore be lowered to, say, six feet at the eaves, which, with a moderate pitch of roof, would afford a view of the coping at points in the yard only a short distance from the buildings. This, of course, would do away with the attic in the coal-shed, now used for keeping straw in, and would necessitate the building of a shed for that purpose in a central position in the yard used by the female prisoners.

"The Sheriff is desired to bring these recommendations to the notice of the County Council.

"The precaution taken by the gaoler in attaching a cord to the knocker of the yard door, so as to enable the turnkey, in charge of prisoners in the yard, to give the required signal without losing sight of them, leaves no room for oversight or neglect of duty in this respect in the future."

After inspecting this gaol for the second time during the official year, I made the following report upon it to the Government, viz:—

"I visited the Kingston gaol on the 28th September. In all departments it was neat, clean, and in thorough order.

"The alterations advised on the occasion of my last inspection have not yet been attended to by the committee in charge, and, on investigation, I found that the platform in the well-house (one of the buildings formerly referred to) is quite unsafe, the wood being decayed, and in many cases thoroughly rotten. It is, consequently, in a dangerous condition and requires immediate attention. The Sheriff has been instructed to call the attention of the committee to the portion of this report having regard to this matter.

"Several minor improvements are also desirable in this otherwise well-constructed and systematically arranged gaol. For instance, a more thorough means of ventilation is required. As an experiment, a ventilator has been placed in one of the wards, which has proved very effectual, that department being now thoroughly ventilated, while the ventilator itself costs but little. I would strongly recommend, therefore, the placing in each of the five other wards a ventilator similar in design and position to the one now in use.

"The locks in this gaol are all of the old common form and pattern, and some of them considerably worn. They should be replaced by the more modern Scandinavian lock.

"Iron bedsteads should also be substituted for the present wooden benches. One for each of the fifty-three cells would not for the present be required; twenty beds would probably accommodate all the prisoners likely to be in custody at one time.

"Structurally this gaol is admirably adapted for the classification of prisoners, and due adoption of disciplinary measures, and those facilities are utilized by the gaoler in a most thorough manner. There is one disability, however, under which he at present labours owing to the distance between his office and the gaol proper. The former is situated in the Court-house building, some considerable distance from the gaol, and should any disturbance or tumult take place while he is engaged in his duties at the office, no little evil might be accomplished before he could be available in the gaol premises.

"I found nine prisoners in custody, six males and three females. One of the former was committed charged with larceny, another charged with desertion from "B" Battery. The others are in custody for vagrancy and minor offences.

"Of the three females, two had been committed as vagrants, and the other was waiting to be transferred to the Reformatory for Females.

"The books were kept with scrupulous care and neatness. The system of keeping the labour book is particularly commendable, as by it the distribution and daily labour of the prisoners is fully recorded, and can be seen at a glance during the entire period of their commitment."

London Gaol.

	1881.	1882.	1883.
Prisoners committed during the year....	719	775	806
Greatest number confined at any one time	61	53	61
Number of re-committals.....	285	278	277
Total cost of maintaining gaol	$6,458.32	$6,059.76	$7,284.75

Dr. O'Reilly reported as under upon this gaol:—

"The London Gaol was inspected on the 13th June. There were twenty-eight prisoners in custody—twenty-three males and five females. All were either on remand or under short sentences for trifling offences.

"The gaol was in excellent order in every respect. Since it has been properly drained, no foul odours are perceptible, and it is altogether in a most satisfactory condition."

This gaol was inspected for the second time on the 1st September. A copy of Dr. O'Reilly's report to the Provincial Secretary is annexed:—

"There were fifty-one prisoners in custody—thirty-five males and sixteen females. This is the largest number of prisoners that have been in custody in this gaol at any one time since August, 1878.

"No less than twenty-nine of these prisoners were committed, and undergoing sentences of various lengths, for vagrancy. They were of the 'drunk and disorderly' class. Two were waiting trial for burglary, and one for fraud. Four were on remand on a charge of arson. All the others were undergoing short sentences for petty offences.

"This is the first occasion on which I have visited this gaol since the appointment of the new gaoler, Mr. Kelly. His long experience as a turnkey in this same gaol renders him well qualified to fill the higher position to which he has been appointed, and I was pleased to find the gaol in good order throughout. The books were also well kept."

Lindsay Gaol.

	1881.	1882.	1883.
Prisoners committed during the year....	61	47	39
Greatest number confined at any one time	8	7	9
Number of re-committals.....	5	15	2
Total cost of maintaining gaol	$1,535.00	$1,466.55	$1,595.58

I inspected this gaol on the 1st June, when I found in custody two male prisoners, who had just been committed as vagrants. Previous to these, the gaol had been empty since the 17th May.

The gaol building was clean and tidy in all parts, although the basement shewed marks of wet and flooding, which had been caused by the stoppage of the

principal drain. The day previous to my visit, the gaoler had removed the obstructions and thoroughly flushed the drain.

The books of record I found to be in good order and neatly kept.

My second inspection of this gaol for the official year was made on the 17th October.

I found three male prisoners in custody. One was under sentence for perjury; one was committed for larceny, and one was committed as a lunatic.

On my last visit I noted the flooding of the basement of this gaol in consequence of the stoppage of the principal drain, and which, at that time, had been opened and the obstructions removed.

The clearing of the drain, and repairs thereto, appear to have been thoroughly done, as no recurrence of the stoppage has taken place. An improvement, which would effectually prevent any stoppage from rubbish or deposit in the drain, could be made by connecting the down pipes on the north side of the gaol with those on the south side, and have them discharge into a tank adjacent to the drain. The drain could then be flushed from the tank at stated intervals, and kept in good order. This improvement would prove of great utility and value, and could be made at a small cost. The Sheriff was, therefore, desired to call the attention of the Committee of Council in charge of the gaol to the matter, with a view to adopting the arrangement proposed.

The gaol, in all its apartments, was in a state of perfect order and cleanliness. The books also were well and neatly kept.

L'Orignal Gaol.

	1881.	1882.	1883.
Prisoners committed during the year.....	19	16	23
Greatest number confined at any one time	7	5	7
Number of re-committals.....	3	3	1
Total cost of maintaining gaol.....	$1,041.27	$1,014.38	$1,423.81.

The L'Orignal Gaol was inspected by me on the 11th of May. I found it to be thoroughly clean and well kept throughout.

Strict attention was paid to keeping the books in proper order, and as required in the rules.

Three male prisoners were in custody. One was waiting trial on a charge of murder; one was under sentence for larceny, and one was detained for want of sureties to keep the peace.

In view of the circumstance and condition of the prisoner charged with murder, it was considered necessary to appoint a special guard for night duty. The instructions in regard to this matter appear to have been fully met by the appointment of a man, who seems to thoroughly understand his duty.

On making my second official inspection of this gaol, on the 22nd of September, I found one prisoner only in custody, namely, Frederick Mann, who was under sentence of death for the crime of murdering four members of the Cook family, on the 2nd day of January last. He appeared perfectly self-possessed, and his assurance of manner and general composure during a short interview would almost lead to the conviction that he failed from a moral point of view to apprehend the enormity of his crime, or that he realized the nearness of his own impending doom.

A paragraph appeared in some of the newspapers alleging that the prisoner Mann had made repeated attempts to escape; also, inferentially at least, criticising most severely the conduct of the officials and discipline of the gaol. Official correspondence in regard to this statement produced a letter, which pronounced

the whole of it to be, "a tissue of falsehoods from beginning to end," and on making further enquiry on the occasion of my visit, I felt fully assured that the paragraph was not too strongly characterized by the use of the language employed.

The gaol regulations appeared to be fully observed. The closest watch over the condemned man was carefully kept, and no attempt to escape had ever been made since his confinement in this gaol.

The alterations made in the rooms of the gaoler's quarters, since the date of my last visit, are a great improvement. Another equally desirable improvement would be the placing of a bathtub in the corridor for the use of prisoners. A cistern could be constructed in the gaol-yard outside, but adjacent to the corridor, in the old part of the gaol, and would no doubt be supplied with an ample quantity of water from the roof. The cistern could easily be connected with the bath by a pump placed in the corridor.

I found the books well kept, and the gaol thoroughly clean, and in excellent order in every apartment.

MILTON GAOL.

	1881.	1882.	1883.
Prisoners committed during the year.....	131	147	97
Greatest number confined at any one time..	27	19	16
Number of re-committals.....	26	26	22
Total cost of maintaining gaol.....	$1,002.60	$1,183.92	$1,234.15

A copy of Dr. O'Reilly's report upon this gaol is appended:

"The Milton Gaol was inspected by me on the 1st of May. Only four prisoners, all males, were found in custody. Three of them were vagrants, all over sixty years of age. The fourth prisoner was a boy of thirteen, sentenced to five months' imprisonment for horsestealing. Since my last visit to the gaol there have been two deaths from disease, and one execution.

"The books were examined and found to be well kept.

"I went through the gaol and all the cells, and found everything without exception in excellent order.

"The locks on the doors of the female corridors have now been changed, so that no one can obtain access to these corridor without the matron's knowledge and consent.

"The ventilators to which attention was called as affording means of communication between cells, have been so changed as to remove the objection.

"The stoves used in this gaol are rather light, and I was told that one of them had been knocked over by a man in a fit. When they are again put up for use they should be fastened by a band of iron passing over them and then screwed to the floor.

"The clothes-room was examined and found to be very neatly kept and well supplied with a stock of gaol clothing."

The following is the report made by Dr. O'Reilly to the Government, after his second inspection, viz:—

"Milton Gaol was visited on the 17th of August. There was only one prisoner in custody, namely, a male debtor, sentenced to twenty days for contempt of Court.

"This gaol has been painted throughout, and the floors oiled, and it now presents an exceedingly neat and cleanly appearance. The yards are also well kept, with the exception of the work-yard, in which a large quantity of lumber and rubbish has been allowed to accumulate, entirely contrary to the regulations.

Amongst other things there was the lumber of a gallows recently used. The Sheriff was requested to see that this stuff was removed without delay, and that Section 95 of the Regulations be applied as strictly to this as to any other yard belonging to the gaol.

"On this visit I had occasion to make enquiry into a recent escape from the gaol. Facts were elicited which showed that the escape was entirely owing to a laxity in care on the part of the gaoler, as, on this occasion he seems to have allowed every condition favourable to the escape of the prisoner to exist, even to a ladder in the yard to enable him to scale the wall."

NAPANEE GAOL.

	1881.	1882.	1883.
Prisoners committed during the year.....	69	68	64
Greatest number confined at any one time..	13	12	13
Number of re-committals.....	8	22	28
Total cost of maintaining gaol.....	$1,537.14	$1,320.07	$1,218.11

Inspections of this gaol were made on the 14th of May and the 19th of September.

On the first occasion I made the following entry on the minute book, viz:—

"I find only one prisoner, a vagrant, incarcerated.

"The gaol is neat and tidy, and will be in thorough condition when the spring cleaning and white-washing are completed. The work is just about to be proceeded with."

My second visit of inspection for the current official year was made on the 19th of September, when I found this gaol, in all its apartments, in a clean and orderly condition.

The wood-yard, however, was not in such a tidy state as was desirable, and the gaoler was instructed to see that the weeds and grass in this enclosure were cut and removed as soon as possible, and in future to keep the yard in proper order with such prison labour as might be available.

An examination of the register shewed it to be neatly kept; but I found that the name of one prisoner, received the previous day, had not, at the time of my examination, been entered therein. The dietary book, also otherwise well kept, lacked the necessary entries for the two previous days. The gaoler was instructed, in the future, to make the necessary entries in all the books of record daily.

There were three male prisoners in custody, one for want of sureties to keep the peace, another for drunkenness and disorderly conduct, and one, an old and infirm vagrant, who is bed-ridden, and who has been confined in the gaol since the date of my former visit.

In reply to an enquiry by the gaoler, he was informed that whenever the time of the sentence of any prisoner expires on a Sunday, the prisoner may be discharged on the previous Saturday, unless he or she desires to remain until the following Monday.

OTTAWA GAOL.

	1881.	1882.	1883.
Prisoners committed during the year.....	647	669	710
Greatest number confined at any one time	52	59	58
Number of re-committals.....	158	102	107
Total cost of maintaining gaol.....	$5,189.05	$5,587.18	$6,564.30

I made the first inspection of the Ottawa Gaol during the year on the 10th of May, when twenty-three male and thirteen female prisoners were in custody. Of the former, one was waiting trial charged with murder; six were on remand, charged with larceny, one was waiting sentence, and two were waiting removal to the Central Prison. One was under sentence for procuring abortion, and five for larceny. The remainder were waiting trial for minor offences.

Of the females, four were under sentence for larceny and the rest for vagrancy, and keeping houses of ill-fame.

The condition of the gaol as regards order and cleanliness was all that could be desired. No improvement had, however, been made in lighting it, and the danger from fire, by using coal-oil instead of gas, still existed in the lighting of the main stairway. In view of the fact that, in the event of a fire in, or near, the stairway referred to, the prisoners would be entirely shut off from any means of escape, I would again strongly recommend the introduction of gas in this part of the building.

The gaoler's books were well and neatly kept, but I found that the gaol Surgeon's book did not contain entries of such frequent visits as are required under the regulations governing common gaols. A complaint was also made to me by a prisoner that he had, two days before my visit, asked to see the surgeon, but so far, had not been visited by him. The Sheriff was directed to call the gaol Surgeon's attention to this matter, and to resquest him to furnish me with an explanation in regard thereto.

The second inspection of the gaol was made by Mr. Hayes. The following minute, approved by me, was recorded by him in the gaol minute book, viz:—

"Acting under the instructions of the Inspector of Prisons, I have this day (4th September,) made an inspection of the Ottawa Gaol.

"I find it, as regards cleanliness and order, in good condition, but some structural and other defects, beyond remedy by the gaol staff, are noticeable. The first of these is the inconvenient entrance, to which attention was called by the Inspector in his minute dated 27th February, 1882. I learn that a member of the County Council has made an estimate of what it would cost to make the entrance recommended by the Inspector. The Sheriff will be good enough to again bring this matter before the Council, and I trust that that body will see the advisability of at once carrying out the recommendation of the Inspector, as, by so doing, not only will a safe and convenient entrance be provided, but the space now taken up by the entrance hall could be used as a storeroom, and the ward now turned into a storeroom could revert to its proper purposes, and enable a better classification of the prisoners being made. Another defect is the lighting of the stairway by coal-oil lamps. The Sheriff will also bring this to the notice of the County Council. Better means of ventilating the female corridors are required With only a few prisoners confined in them, the air is not pure, and, of course, in winter when there are a greater number of inmates, and window ventilation is not practicable, the place must get quite foul smelling. Ventilators put in the roof would remedy this.

"Most of the floors are in need of a coat of paint. If the Council would supply the material, the work could be done by the prisoners.

"No bedsteads are supplied in this gaol, and the beds have to be made up on the floor. I would point out to the Council that this must add very much to the wear and tear of the bedding.

"There are in custody seventeen men and fifteen women. Of these, twenty-six are under sentence for such offences as vagrancy, drunkenness, assault, larceny, keeping and frequenting houses of ill-fame. One is waiting trial for murder, and another for larceny. Three are on remand for minor offences, and

one has been committed as being insane. This man is now at the Police Magistrate's Court and, therefore, I am not able to speak of his condition.

"I am glad to see that the prisoners are still kept constantly at work. Their conduct as a rule is good, and there are but few entries in the punishment book.

"I have examined the books. In the gaol Surgeon's book there is no record of any visit having been paid by the Surgeon between the 26th of April and 26th of June. Since the latter date his visits have been more frequent and regular.

"The matron is instructed that the door at the head of the stairway leading to the female ward must always be kept locked, and the key retained in her own possession.

"I find that on Sundays the gaol is visited by the various city clergymen, and also by the members of the Sisterhoods and of the Young Men's Christian Association.

"On the 1st of August, Mr. William Kehoe was appointed to the office of gaoler, *vice* Mr. Eastwood, resigned."

Owen Sound Gaol.

	1881.	1882.	1883.
Prisoners committed during the year.....	187	168	130
Greatest number confined at any one time	36	31	20
Number of re-committals.....	67	64	45
Total cost of maintaining gaol.....	$3,809.05	$3,663.00	$3,439.92

An inspection of this gaol was made by me for Dr. O'Reilly on 24th of June, when I found twelve male prisoners in custody. One was committed for murder; two for larceny; two in default of sureties to keep the peace; and the other for vagrancy and minor offences.

Since the commencement of the present year, I notice that the deaths of seven old and infirm prisoners have been recorded. There is every evidence, however, of their having had proper care and attention, as well as all the comforts which could be furnished in such circumstances.

The books were well and properly kept, and the gaol in all its apartments was in excellent order.

The wooden bedsteads at present in use are in a dilapidated and broken condition. In replacing them, the new ones should be of the ordinary pattern in iron, which are now so extensively used.

Some of the alleged circumstances concerning the murder with which the prisoner now in custody is charged, are such as may indicate that he is of unsound mind. The gaoler is therefore instructed to keep this prisoner under close observation, and to report to the Sheriff any circumstances which would shew the necessity for more closely watching him.

The gaol was visited by Dr. O'Reilly and the following minute recorded by him:—

"On the occasion of my second annual inspection of the Owen Sound gaol (23rd August) there were twelve male and two female prisoners in custody. One of the males was awaiting trial for murder; one for burglary; and two for larceny. One was held for threatening his wife, and awaiting sureties to keep the peace. One was under a three months' sentence for larceny, and all the others, with but one exception, were vagrants and drunkards. The exception was a prisoner committed by the County Magistrate as insane. He had been quite two months in gaol on this charge and I was informed that the gaol Surgeon had not made any certificate in respect to his mental condition.

"It is most unwarrantable that a man can be kept a prisoner under a charge of lunacy for such a length of time without the question of his sanity or insanity being definitely settled. The Sheriff was instructed to require the gaol Surgeon to make an immediate examination and certify accordingly, and that if this was not done at once, to make a report to me to that effect for the information of the Government.

"The two female prisoners were both charged with assault and were waiting trial.

"The general repairs of the gaoler and turnkey's quarters were in progress. The plastering previously upon the walls has been taken off and the walls properly lathed before plastering. This will add much to the comfort and health of the occupants of these apartments.

"There are no bedsteads in the cells in this gaol, and boards are made to answer the purpose. It is recommended that proper iron bedsteads be substituted therefor."

ORANGEVILLE GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	12	35	43
Greatest number confined at any one time	5	10	14
Number of re-committals.....	..	4	6
Total cost of maintaining gaol.....	$875.00	$1,572.00	$1,913.00

I inspected this gaol for Dr. O'Reilly on the 19th June. There were six prisoners in custody—four males and two females, all of whom were committed as vagrants, and with the exception of one, they were all old and infirm.

An examination of the books shewed them to be in good order and properly kept.

The ceiling and walls inside the corridor on the west and north sides shew indications of leakages in the roof. I understand, however, that repairs have been ordered and will be proceeded with immediately, after which the ordinary spring cleaning and whitewashing will be attended to. The latter must necessarily be postponed until the repairs just mentioned are done. The cells and corridors were, notwithstanding, in good order, and the bedding particularly clean and kept.

Good progress has been made in laying out walks through and trimming up the grounds surrounding the county buildings and the gaolyard. The former, though comparatively new, now present a very tasteful appearance.

The wood-yard, however, which is jointly used for storing the supply of wood used for the Court-house and gaol is, in some respects, inconveniently situated; and in consequence thereof is not in so clean and tidy a condition as is desirable. This enclosure is the only one which has not received its measure of improvement. The next available labour should be applied here, so as to put this yard in fair trim for the purpose for which it is used.

The gaol was visited by Dr. O'Reilly on 23rd August, and reported upon as under:—

"There were thirteen prisoners in custody—eleven males and two females.

"Two of the males were boys aged fourteen and seventeen years respectively, who are serving three months' sentences for petty larceny. Another of the male prisoners was an idiot.

"All the other prisoners were simply the ordinary paupers of the county, some of whom were originally inmates of the county poor-house before this county was separated from the county of Wellington. This gaol is, consequently,

in the absence of a county poor-house, being made to do duty for that purpose instead of the purpose for which it was originally intended.

"The gaol is kept in excellent order throughout. The water supply, which was not good at the date of the last inspection, is now ample and of good quality, a new well having been dug in the workyard.

"Complaint was made of there being no proper ashpit attached to this gaol, the ashes having to be carried out and deposited upon the commons. This is not a desirable condition of things, and I would suggest that a proper brick ashpit be constructed in the workyard. In that yard it was noticed that firewood had been piled against the fence, and that a ladder and some lumber were also lying there. The Sheriff was requested to see that the wood be piled at a proper distance from the fence, and that all lumber and other material be removed, and the yard kept strictly in accordance with the gaol regulations."

PERTH GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	67	55	68
Greatest number confined at any one time	21	16	20
Number of re-committals.....	22	21	22
Total cost of maintaining gaol.....	$2,749.89	$2,461.22	$2,270.03

I inspected this gaol on the 6th June. There were nine prisoners—seven males, two females—in custody. One man was waiting trial for larceny, and one was detained under a judgment summons. The rest were all under sentence for vagrancy, etc.

The gaol was in an excellent state of cleanliness aad order. The gaol structurally, as well as in its general equipment, is alike a credit to the county and to the officers in charge of it. An improvement would be the substitution of metal buckets for wooden ones.

Since the last inspection several of the old and infirm vagrants then referred to have died; one at the age of 106.

I instructed Mr. Hayes to make the second inspection. He did so and reported to me as follows:—

"I have the honour to report that I made an inspection of the Perth gaol on the night of the 5th September. There were then five male and two female prisoners in custody, none of whom were charged with serious offences.

"The gaol in all respects was in perfect cleanliness and order. There was a supply of stone on hand for the prisoners to break. I observed nothing else requiring special comment."

PICTON GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	82	96	89
Greatest number confined at any one time	11	9	8
Number of re-committals.....	33	44	44
Total cost of maintaining gaol.....	$1,061.64	$1,134.24	$1,064.63

I made an inspection of the Picton gaol on the 18th July. No prisoners were then in custody, and the records showed that since the date of the previous inspection there had been several periods of time during which the gaol had no inmates.

Everything pertaining to the gaol was found to be in excellent order and condition.

PEMBROKE GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	73	74	78
Greatest number confined at any one time	16	17	16
Number of re-committals.....	28	31	26
Total cost of maintaining gaol.....	$1,535.86	$1,512.11	$1,530.14

On the day of my visit to the Pembroke gaol, 7th June, I found six male and five female prisoners in custody. All except one, who was sentenced for shooting with intent, were under sentence for short terms and for minor offences. Amongst the prisoners is an imbecile woman with her three children, who are in a like condition. The oldest is twelve years of age, and the youngest six. This family have been inmates of the gaol since December, 1880, and it is to be regretted that, apparently, no other means can be provided for the care and training of the unfortunate children.

The gaol building was in good order throughout, and the books were well kept.

I made a second inspection of Pembroke gaol on the 26th September. There were nine prisoners in custody, viz.: five men, one woman and three children. Of the former, two were under sentence for larceny and one for vagrancy, and the other two had been committed charged with incest and rape respectively.

The three children referred to were also here when I last visited the gaol. They, together with their mother, the imbecile prisoner, are all, more or less, imbecile and unfit to care for themselves, but they appeared to be in good health and well looked after in their present quarters.

The books were well kept and in a satisfactory condition. The gaol was perfectly clean and tidy throughout.

PETERBOROUGH GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	117	121	181
Greatest number confined at any one time.	15	11	23
Number of re-committals.....	63	60	35
Total cost of maintaining gaol.....	$2,159.68	$1,679.69	$2,708.81

This gaol was inspected by me on the 12th June, when ten males and two females were in custody. Of the men, one was waiting trial, charged with murder; five were sentenced for drunkenness, and four for vagrancy. Both the females were vagrants.

There has been a large increase in the commitments to this gaol, as they number 155 during the nine months of the current official year, against 121 in the whole of the past year. This is presumably due to the influx of a more or less transitory population, employed in the public works now in progress in the county.

The matron stated that for some years quite a number of females have been committed to the gaol, apparently for the purpose of providing them with a place during their confinement, and that for one woman then under her charge, no nurse was provided, and that consequently she felt her inability to do her duties as matron, and also look after the prisoners and their infants. It seems only reasonable that the municipality should provide for the proper nursing or caring for such patients, in the event of the gaol being the only place for their shelter.

I again inspected this gaol on the 17th October. I found twelve male prisoners in custody, two of whom were under sentence for larceny; one had

been committed as insane; and the other nine were under sentence for short periods for vagrancy and drunkenness. One female vagrant was also under sentence for a short period.

I found Henderson Nesbit, the turnkey, acting as gaoler, he being temporarily in charge, pending the appointment of some one to the position lately made vacant by the death of James McWilliams, who for a length of time has occupied the position of gaoler.

The gaol was in good order, and the books well kept, which is creditable, in view of the fact that during the gaoler's illness, which resulted in his death, that official's responsibilities largely devolved upon the turnkey.

PRINCE ARTHUR'S LANDING GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	169	131	412
Greatest number confined at any one time.	19	12	20
Number of re-committals.....	10	5	24
Total cost of maintaining gaol	$1,885.21	$1,836.72	$2,179.33

Authority was given by Dr. O'Reilly to Mr. Hayes to visit this gaol. A copy of his report is appended:—

"I have the honour to state that in accordance with the instructions received, I made an inspection of the gaol at Prince Arthur's Landing on the 2nd July.

"There were then seven male prisoners in custody, six of whom were under sentence for minor offences—the seventh was waiting trial for drunkenness. One of the prisoners is an old epileptic, who has been committed to gaol from time to time for years past.

"The various books are correctly, although not very neatly kept. Ten punishments have been awarded since March, 1882. All were in accordance with the regulations, and not out of proportion to the offences committed.

"The commitments to this gaol are increasing in number. As many as seventeen men have been in custody at one time, while there is only cell room for ten, and the gaoler has been obliged to refuse to receive prisoners sentenced by the Justice of the Peace at Fort William.

"The gaol was in good order, except in the female department, which was untidy. The exterior of this part of the gaol, which is built of hewn logs, requires plastering. This should be attended to before the winter sets in.

"Some additional blankets will be required in the autumn. The gaoler was instructed to make a requisition for the number required.

"A commendable feature in the management of this gaol is the fact, that the sentence of hard labour passed upon prisoners is, as a rule carried out, as a great deal of work has been done by them on the gaol grounds and approaches."

SIMCOE GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	90	96	108
Greatest number confined at any one time.	10	11	10
Number of re-committals.....	29	41	44
Total cost of maintaining gaol	$1,623.42	$1,537.03	$1,623.48

Dr. O'Reilly entered the following minute of his first inspection:—

"On visiting the gaol to-day, 12th June, the Inspector found everything in excellent order throughout the gaol, perfect cleanliness and good order prevailing

everywhere, except in one respect, viz., the cesspool in the airing court of the female wards. This cesspool is not properly covered or well ventilated, and the Inspector fears that during the hot weather, danger to the health of the prisoners and gaoler's family may result.

"The Inspector would suggest that a receptacle should be built in the female yard, similar to one now in the work-yard, only smaller, and that both these be used for the reception of the contents of the earth-closets and the night-buckets; that nothing go into the cesspool except the liquid from the kitchen and laundry, and that it be thoroughly closed from the external air.

"He would also suggest that an opening through the wall of the female yard be made, to afford egress for the contents of the brick receptacle when it requires to be emptied."

The following is a copy of Dr. O'Reilly's report upon his second inspection of the gaol, viz:—

"I again visited the Simcoe Gaol on the 5th September. There were four male and one female prisoners in custody. One of the males, charged with burglary, was on remand; one was retained for want of sureties to keep the peace; two others were undergoing short sentences for larceny, and vagrancy, respectively.

"The one female prisoner is an idiot. She is held in custody, and very properly so, as she is unfit to take care of herself."

St. Catharines Gaol.

	1881.	1882.	1883.
Prisoners committed during the year:....	138	104	132
Greatest number confined at any one time.	17	12	14
Number of re-committals.....	13	11	16
Total cost of maintaining gaol	$2,416.75	$2,297.93	$2,349.63

The following is Dr. O'Reilly's report to the Hon. the Provincial Secretary upon the first visit made to this gaol during the year:—

"I made an inspection of the St. Catharines Gaol on the 20th February. There were on that day eight prisoners in custody, seven males and one female. One of the former, who had been recently discharged from the Hamilton Asylum, was under sentence to the Central Prison for larceny. Of the others, two were on remand charged with larceny; three were under sentence for vagrancy; and one for drunkenness. The female prisoner was a sister of the discharged lunatic above named, and was also sentenced for larceny.

"The gaol was in its usual excellent condition of cleanliness. It is, however, without a proper bathtub, and although the pipes from the water works enter the building, it is not possible, with the present arrangements, that prisoners can be properly bathed. The attention of the authorities was called to the defect, with a view to its being remedied. The books were properly kept."

The gaol was again inspected by Dr. O'Reilly during the official year, and the following report made upon it, viz:—

"The St. Catharines Gaol was inspected by me on the 6th September. There were then five male and one female prisoners in custody. One of the former and the latter were held for want of sureties to keep the peace. Of the other male prisoners, one was charged with insanity, and three were vagrants.

"With respect to the alleged lunatic, I found him to be a very old man, entirely unfit from age and decrepitude to take care of himself, and not at all a proper inmate for a gaol. The Surgeon reports upon his case, under date of 3rd September, as follows:—

"The prisoner is of such filthy habits, that the corridor in which he is confined has become unfit to put prisoners in. The stench from the prisoner's clothes and bedding, as well as from the cell and corridor in which he is confined, is most deleterious to the sanitary condition of the gaol. In fact, if the prisoner is not soon removed from this gaol, I fear that typhoid fever or some malignant disease will be developed by the poisonous air of the corridor, caused by this prisoner's filthy habits. It is impossible to neutralize the poisons in the atmosphere of the corridor he is confined in by disinfectants.'

"The facts of the case are that the poor man is sent into the gaol because no one can be found to take care of him for the sum of three dollars per week; which was the sum provided by the county authorities to keep him, and the present mode of supporting him is adopted as the cheaper way of taking care of him.

"In all other respects the gaol was found to be in its usual excellent condition."

SARNIA GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	214	286	227
Greatest number confined at any one time	19	22	20
Number of re-committals	28	22	8
Total cost of maintaining gaol.....	$3,220.73	$3,744.00	$3,512.80

The following is the report made by Dr. O'Reilly on this gaol:—

"I visited the Sarnia gaol on the 22nd June. There were seven male prisoners in custody; no females. One of the prisoners, an Indian, was waiting removal to the Reformatory for Boys, to which he had been sentenced for five years for horse stealing; another prisoner, also an Indian, was committed as insane; the other five prisoners were vagrants and drunkards undergoing short sentences.

"The books were examined, and found to be satisfactorily kept. The stores were inspected, and found to be in an exceptionally neat and good condition.

"The work-yard of this gaol is too small for its purpose. It is very much shut in; and when the weather is warm, as it was on the day of my visit, it is simply unfit for the men to work in. This was so apparent when I visited the yard—the day being intensely hot—that the gaoler ordered the men to cease working until it became cooler. There is abundance of room in the rear of this yard for setting apart another and larger working yard, which could be made much easier of access than the present one, and would be better adapted in every way, if properly enclosed, for carrying on the gaol work. There are several down pipes in the yards of this gaol which afford excellent facilities for the escape of prisoners. A re-arrangement of these pipes should be made, so that their position would be less objectionable."

Dr. O'Reilly's report upon his second inspection is appended.

"I made an inspection of the Sarnia gaol on the 31st August. There were eight male prisoners in custody, one of whom was waiting trial for larceny; one was under sentence of two months for larceny; and two were held as dangerous lunatics. The others were under sentence for drunkenness and vagrancy.

"There was but one female prisoner in the gaol at the time of my visit. She was undergoing a sentence of two months for using abusive language.

"I found the gaol in all its parts perfectly clean and orderly. The books were examined, and found to be properly kept."

STRATFORD GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	166	152	132
Greatest number confined at any one time	23	23	13
Number of re-committals	66	36	27
Total cost of maintaining gaol.....	$2,300.38	$2,328.77	$2,296.44

The report made to the Government by Dr. O'Reilly, on the gaol, is as follows:—

"On inspecting the Stratford gaol, on the 2nd May, five male prisoners were found to be in custody; no females. One of the prisoners was under sentence of two months, for wounding; three were vagrants and drunkards; and one was a debtor, held under a *capias*.

"The interior of the gaol was in excellent condition, so far as cleanliness and good order were concerned. The difficulty of keeping a structure of the character of this gaol in a proper condition is very great; and the fact that it is well kept reflects credit upon the gaoler, who has many difficulties to contend with."

The following is a copy of the second report upon the gaol, made by Dr. O'Reilly, viz:—

"I again visited the Stratford gaol, on the 4th September. Only five prisoners—four males and one female—were found to be in custody.

"Two of the men were undergoing short sentences for larceny. The other two, as well as the woman, were all charged with insanity, and were waiting examination.

"So far as it was possible for such a structure to be, the gaol was in good order. The books were examined, and found to be correct."

SANDWICH GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	171	270	262
Greatest number confined at any one time	25	36	33
Number of re-committals	14	42	22
Total cost of maintaining gaol.....	$2,281.46	$2,480.99	$2,708.14

Dr. O'Reilly visited this gaol, and made the following report upon it:—

"I inspected this gaol on the 19th June. There were in custody twenty prisoners—thirteen males and seven females.

"Five of the male prisoners were awaiting trial, viz:—two for murder; one for embezzlement; one for larceny; one for fraud; two were undergoing sentence of three months for perjury and larceny respectively. Four were under short sentences for vagrancy and drunkenness; and two had been committed as insane.

"Of the females, one was committed as a lunatic; another was under sentence for larceny; and all the others were under short sentences for vagrancy, drunkenness and prostitution.

"The corridors and cells of the gaol were in fairly good order, and so were the yards. The kitchen and offices connected with it were found to be in an exceptionally clean and tidy condition. All the books were examined, and found to be correctly kept.

"The heating apparatus of this gaol is not in a satisfactory condition. The Sheriff was recommended to see that it be properly arranged before the cold weather again sets in."

A second inspection of the gaol was made during the year. A copy of the report is given hereunder:—

"I visited the Sandwich gaol on the 30th August. There were twenty-six prisoners in custody—twenty males and six females.

"Of the male prisoners, three were awaiting trial on a charge of murder; one on a charge of larceny; three were said to be insane; and all the others were undergoing short sentences for minor offences, such as assaults, drunkenness, etc.

"All the female prisoners were under short sentences for petty larceny, prostitution and vagrancy.

"The gaol was found to be in fairly good order, and the books properly kept. The chief want I observed in the gaol was that of a proper stove for the laundry, and I would suggest that a suitable one be purchased."

ST. THOMAS GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	277	212	193
Greatest number confined at any one time	28	27	20
Number of re-committals.....	17	63	60
Total cost of maintaining gaol.....	$2,168.18	$2,453.06	$2,509.28

Dr. O'Reilly's report to the Government is annexed:—

"I inspected this gaol on the 13th June, when there were found to be ten male prisoners in custody.

"Two of these prisoners were under sentence for larceny, and three were awaiting trial on a similar charge. One was waiting trial for embezzlement; one was under sentence for breach of the liquor law; one was waiting trial for assault; one was under sentence for drunkenness; and one was in custody under civil process for debt.

"There has been some improvement made in the locks in this gaol; but beyond that things are very much in the same unsatisfactory condition as they have been for years past.

"During the winter the gaol took fire from the furnace, and but for the fact that the gaoler had a fire extinguisher of his own on the premises, it is not unlikely that the gaol would have been burnt down. As it is, the prisoners were taken into the yard for a time, and when the fire was subdued, it was found that one of them had made his escape.

"The sewer to drain the gaol has not yet been put in, although the tiles have been upon the grounds for months."

At the time of his next inspection Dr. O'Reilly recorded the following minute thereof:—

"The St. Thomas goal was inspected by me for the second time during the official year on the 1st September.

"There were seven male prisoners in custody, none of them being of special importance, having regard to crimes committed.

"The gaol was found to be in as good order as it is possible to keep it, considering its many structural disadvantages. The books were found to be properly kept."

SAULT STE. MARIE GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	5	26	24
Greatest number confined at any one time	3	7	7
Number of re-committals.....	2	3	5
Total cost of maintaining gaol.....	$1,362.38	$1,410.82	$1,481.73

Instructions were given by Dr. O'Reilly to Mr. Hayes to visit this gaol. A copy of his report is annexed:—

"I beg to state that acting under directions received, I, on the 6th July, made an inspection of the Sault Ste. Marie gaol.

"An examination of the register shewed that on the 1st October there were two prisoners in custody, that sixteen had since been committed, and eleven discharged, leaving seven in custody on the day of my visit. These prisoners were all males, and no less than three of them had been committed as insane. One was waiting removal to the Toronto Asylum. Of the other two, one had quite recovered and was about to be discharged, as the examining authorities had certified to his sanity; the other was, perhaps, a little weak-minded, but not dangerous to be at large. It is difficult to understand what could be the reason for committing him. As his friends live in Nova Scotia, the Sheriff was desired to communicate with them, and in the meantime to retain the prisoner under the observation of the Surgeon, unless work could be found for him to do, in which case he could be discharged on the gaol Surgeon's certificate.

"Three of the other prisoners were waiting trial—two for rape and one for assault, and the fourth was under sentence to twelve months' confinement in the Central Prison.

"The books are properly kept. The gaol Surgeon makes frequent visits and appears to give good attention to his duties.

"As far as cleanliness and order are concerned, the gaol was in good condition and a credit to the gaoler, but structurally it is defective. There is neither prison kitchen, bathroom, nor storeroom, and the quarters provided for the gaoler are in the basement, and are so damp as to be almost unfit for use at any time, and in the fall and spring are really not habitable. Whilst I was at Sault Ste. Marie, I was glad to learn from the Public Works Department, that it had been decided to build a new house for the gaoler next year. I would recommend that when this house is built, that the present quarters be fitted up as a bathroom and kitchen, and that the driest room be used, if practicable, as a storeroom. In the existing arrangements the one kitchen has to be used in common by the gaoler's family and for prison purposes. One ward in the gaol is used as a storeroom, and when a prisoner is admitted he has to be stripped, examined and bathed in the presence of the other prisoners.

"Another defect is the lack of a proper water supply. At present the water has to be drawn from the river, at a cost of about sixty-five dollars yearly. I made enquiry as to the best method of getting a good supply of water, and came to the conclusion that the boring of a well seemed to be the most feasible plan, and therefore I recommend its adoption.

"The fence round the gaol yard is in a very bad condition. Instructions have just been issued by the Public Works Department to have it repaired.

"The chimneys in the Court-house and gaol are in a defective condition, and I would recommend that the Public Works Department put them in a proper state."

TORONTO GAOL.

	1881.	1882.	1883.
Prisoners committed during the year	2,407	2,636	2,633
Greatest number confined at any one time	145	151	162
Number of re-committals	1,060	1,078	1,117
Total cost of maintaining gaol	$16,996.67	$18,185.63	$16,001.56

I inspected this gaol for the first time during the year on the 22nd March. There were then 93 male and 48 female prisoners in custody. Of the former the

following were under sentence: five for assault, one for malicious injury to property, one for keeping disorderly house, one for being an inmate of the same, nine for larceny, and fifty-nine for drunkenness, vagrancy, etc. Six were waiting trial for the following offences, respectively: assault, robbery, burglary, housebreaking, perjury, and larceny. Six were on remand, one being charged with embezzlement, the others with vagrancy and larceny. Three had been committed as lunatics, and two were in custody under *capias*.

Forty-four of the female prisoners had received sentence for drunkenness, and two for being inmates of a disorderly house. The other two were waiting trial.

I saw all portions of the gaol during this visit. They were found to be clean and tidy, with the exception of the room in the female quarters used as a kitchen and dining-room. The ceiling and walls of it were blackened and dirty from the use of a broken and dilapidated stove, through the top of which the gas and smoke escaped more freely than through the pipe.

The books of record were examined and found to be neatly and correctly kept. The quarterly return of supplies purchased and consumed not having been made, the gaoler was requested to forward it as soon as possible.

The engineer of the gaol died a short time before my visit. I pointed out to the Council that an opportunity was thus afforded of carrying out the recommendation previously made, to the effect that a highly paid engineer is not needed on the staff, but that a person having some knowledge of steam heating should be engaged, who in the summer could be employed as a turnkey. A considerable saving could be thus effected in the maintenance expenses of the gaol.

The second inspection was made by Mr. Hayes, who reported as follows:—

"I beg to state that, acting under your orders, I made an inspection of the Toronto gaol on the 7th August.

"I am glad to be able to report that every part of it was in a most satisfactory condition, and the cleanliness and order which prevailed reflected great credit upon the gaoler and his staff. The beds and bedding were clean and were neatly made up; the walls were well whitewashed and the ironwork properly painted. It would be a great improvement were iron bedsteads to be substituted for the present wooden ones, which it is extremely difficult to keep free from vermin. The woodwork in the main entrance hall and vestibule requires painting.

"I also visited the yards. In the working yard there is a large oak. Clause No. 97 of the Gaol Rules states that no trees shall be allowed in any of the yards. I recommend therefore that it be cut down, as its presence in the yard is not only a violation of a rule, but is the cause of a nuisance, as the leaves from it in the fall choke up the eave-troughs of the gaol.

"When in the boiler-room, I took the opportunity of asking the engineer about certain difficulties, which, according to some of the newspapers, had arisen between the gaoler and himself. I was assured by him, and also by the gaoler, that there was no truth in these statements.

"There were in custody sixty-eight male and fifty-four female prisoners—a total of 122. Of these, ninety-seven (forty-six males, fifty-one females) were under sentence, no less than seventy-three being for drunkenness, the remainder for larceny, assault, vagrancy, etc. Ten males and three females were waiting trial as follows: for indecent assault, one man; for larceny, seven men; for forgery, one man; for shooting with intent, two women; for cattle stealing, one man and one woman. Ten men were on remand, charged with assault, larceny, insanity, housebreaking, etc., and two men were detained under *capias*.

"Just as I arrived at the gaol, six of the sentenced male prisoners started out to work in the Riverside Park. The others, however, are in idleness, with the

exception that they have to keep the gaol clean and to work in the kitchen, boiler-room, etc. The females are more constantly employed in laundry work, sewing, etc.

"The man on remand, charged with insanity, was reported to be very violent. When I saw him he was asleep. There is also an idiot boy in custody. It is a great pity that at present there is no room for him in the Orillia Asylum.

"Six of the male prisoners were boys under sentence for short periods. They were in a ward by themselves, in charge of a well conducted adult prisoner. The gaoler is to be commended for his efforts to make a proper classification of the prisoners.

"The regulation uniform has now been supplied to the gaol in nearly sufficient quantity to clothe all the sentenced male prisoners. The regulations regarding diet are also adhered to.

"The books were examined. The entries in the register shew that, during the currency of the official year, there has been an increase in the number of prisoners committed. The register is most neatly kept, but should be written up more frequently, so as to be always available as an official record of the movements, etc., of the prisoners.

"The Surgeon's books were not in a satisfactory state. In one, the entries are made in pencil, and consequently many of them are difficult to read. In another, which, so far as I could find out, is intended to be a summary of the one just referred to, no entries have been made since the 6th July. There does not appear to be a book in which the Surgeon can enter remarks, or orders, respecting the sanitary condition of the gaol, the clothing, dietary or treatment of prisoners, as indicated in Clauses 33 and 34 of the Gaol Regulations."

WALKERTON GAOL.

	1881.	1882.	1883.
Prisoners committed during the year.....	73	54	47
Greatest number confined at any one time	9	9	10
Number of re-committals.....	17	7	3
Total cost of maintaining gaol.....	$1,643.85	$1,626.36	$1,728.14

I inspected this gaol for Dr. O'Reilly on 22nd June, and found only one prisoner, a female, in custody. She was an imbecile, but apparently in good physical health and strength.

The books were in good order and well kept. The gaol was perfectly neat and clean in all its departments.

As a reason why so few prisoners have been committed lately, the gaoler states that tramps and vagrants avoid the county. A member of the fraternity was lately in custody, and on his person was found a diary recording his visits to various localities in Canada and the United States. The reasons for avoiding certain localities at stated periods, and also advantages to be derived by visiting others at the times named, were fully written out for his guidance. The methodical arrangements of this individual no doubt insured him a certain measure of success in his calling.

The second inspection of the gaol was made by Dr. O'Reilly, who reported upon it as under:—

"The Walkerton gaol was inspected by me on the 22nd August. There were four prisoners in custody on that date—three males and one female. One of the males was under sentence for larceny, and the two others were vagrants. The one female prisoner in custody is an idiotic woman, who is unfit to be at large and will eventually be removed to the Idiot Asylum.

"I can only repeat, in reference to the condition in which this gaol is kept, what has been said in all previous reports, namely, that as to order and cleanliness it was simply perfect in every respect.

"The books were also thoroughly well kept. The daily journal and the labour book both require special mention for the exceptionally excellent manner in which they are kept."

WOODSTOCK GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	305	201	198
Greatest number confined at any one time	45	31	29
Number of re-committals.....	111	92	87
Total cost of maintaining gaol	$3,437.26	$3,231.65	$4,209.78

A copy of the minutes made by Dr. O'Reilly of his inspection of this gaol is given hereunder:—

"The Woodstock gaol was inspected by me on the 16th March. There were then nineteen prisoners; seventeen males and two females, in custody. Of the former, two were waiting trial for murder and forgery, respectively. There were under sentence, three for larceny, one for bigamy, and eleven for vagrancy. The females were both imbecile, and both imprisoned on a charge of infanticide. One had been tried and acquitted on the ground of insanity, but had not been disposed of by the Judge. The other was waiting trial. She has been in custody twice before on a similar charge, and if allowed her liberty, will probably soon be in again, as she has not sense enough to keep out of trouble.

"One of the male prisoners was a lad eleven years old, who had been sentenced by a magistrate to two years for larceny of a few carpenter's tools. The wisdom of sentencing a young lad to the common gaol for such a length of time, there to herd with drunkards, vagrants and criminals, need not be commented upon here. I at once took steps to have the boy transferred to the Reformatory at Penetanguishene."

The second report upon the gaol during the year is appended:—

"On the 17th August, I inspected the Woodstock gaol. There were ten prisoners in custody; seven males and three females. One of the male prisoners was waiting trial on a charge of rape, and another on a charge of manslaughter. The other male prisoners were under short sentences for vagrancy and drunkenness, amongst whom was a lad seventeen years of age, undergoing a two months' sentence for drunkenness and disorderly conduct.

"One of the females is imprisoned for child murder. She is a harmless, idiotic woman, simply incapable of taking care of herself, and is held in custody, subject to the order of the Court. Another of the females was under sentence to the Reformatory for Females, for vagrancy, and was waiting removal. The third was undergoing a sentence of two months for larceny.

"The gaol was in good order, and the books were found to be properly kept. There was only one case of punishment recorded since the last inspection. A prisoner was confined for one day in the dark cell for assaulting a fellow-prisoner.

"The wooden flats, used in this gaol for bedsteads, are very objectionable, and great difficulty seems to exist in keeping them free from vermin. It is desirable that they should be replaced by iron bedsteads.

"The grass in all the yards is apparently allowed to grow too long. The attention of the Sheriff is called to this matter."

WELLAND GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	339	177	235
Greatest number confined at any one time	50	30	43
Number of re-committals.....	125	62	85
Total cost of maintaining gaol	$4,576.25	$2,544.00	$3,315.13

Dr. O'Reilly made the following report upon this gaol:—

"I inspected this gaol on the 11th May. On that date there were nine prisoners in custody—eight males and one female.

"One of the males had been tried for assault, and was waiting sentence. One was under sentence for using abusive language, and six were drunkards and vagrants, undergoing sentences varying from thirty days to four months.

"The one female prisoner was a prostitute, under sentence for two months.

"During this inspection I took up the question of somewhat long standing, between the gaoler and the turnkey, in reference to their apartments. Both of them, with their families, live in the basement of the Court-house, and, between them, they occupy the whole basement, with a common entrance from the front into the hall. Bad feeling has arisen between them in reference to such trifling matters as the opening and closing of doors, and a good deal of quarrelling has resulted. I had an interview with the Chairman of the Public Buildings Committee, and suggested the erection of a partition across the main hall, and the opening of a door through one of the walls from the kitchen into one of the goaler's bed-rooms. These alterations, if carried out, will entirely separate the two families, and will, it is hoped, end the difficulty.

"The matron had been in the habit of leaving her keys hanging in a place where anyone about the premises could have access to them. Strict injunctions were given her that the keys were hereafter, when not in use, to be kept somewhere under lock and key, so that no one but herself could reach them."

The following is a memorandum made by Dr. O'Reilly in regard to subsequent visits made by him:—

"I visited the Welland goal on the 11th May, for the purpose of holding an investigation into charges made against certain gaol officials.

"The investigation was continued on the 17th of the same month, and again on the 1st June, and the result reported to the Honourable the Attorney-General. On each of the occasions referred to, the opportunity was availed of to examine the gaol, and it was found in fairly good order throughout."

WHITBY GAOL.

	1881.	1882.	1883.
Prisoners committed during the year....	95	92	116
Greatest number confined at any one time	13	15	15
Number of re-committals	30	27	46
Total cost of maintaining gaol.....	$1,899.46	$2,188.51	$1,950.79

I inspected this gaol on the 30th May, and entered the following minute in the book:—

"Only two old and infirm vagrants are in custody.

"The gaol premises are found to be tidy and in good order, shewing creditable care and oversight on the part of the gaoler. The sanitary condition of the gaol and its state of repair are, however, far from satisfactory.

"No attempt has been made to remedy the condition of the basement or cellar floor, referred to in former minutes. It is imperatively necessary for the health of the gaol officials and inmates that the present brick floor, damp and saturated as it is, should be replaced by a concrete one of proper thickness.

"Leakages in the roof are also noticeable, and should be attended to immediately.

"These are but minor defects in comparison with the condition of the gaol as regards drainage and ventilation. The smell in the north corridor is most disgusting, and beyond doubt arises from the condition of the drain into which the water-closets formerly emptied. Although these closets have not been in use for some time, yet it has been noticed that, when the current of air is from the direction of the opening of the drain, the smell in the corridors is worse than ordinary. This is readily accounted for by the fact that there is no trap placed in the drain in its entire length, and consequently, there is no other ventilation except through the closets and from thence into the corridor.

"This condition of things has come to the notice of the County Council, and it has been decided to construct a new drain to the Court-house building. It is most desirable that this drain should be extended to the gaol, and so constructed as to permanently provide a means of drainage from both buildings. It is therefore recommended that the drain be made of salt-glazed tile piping, twelve inches in diameter; and that in order to exclude all gases from both buildings, a branch pipe leading from each of them into the main drain be laid, with a trap in each branch. A properly-arranged man-hole to be placed over each trap. The pipes to be laid in Portland cement. Man-holes should also be made adjacent to the above, but outwardly from the buildings, in order to allow the escape of gas accumulating below the traps, and to be of use in case of stoppage or when flushing.

"The connection between the sink in the gaoler's quarters and the present drain is without a trap, and unquestionably acts as a duct for the foul air to escape into the rooms. It should be closed at once, and, if connected with the new drain, should be properly trapped.

"The ventilation of the gaol is as defective as the drainage, but can be easily made good by running a shaft or shafts from the ceilings of the lower and upper corridors to the attic. These shafts can be so placed as not to endanger the safe-keeping of the prisoners.

"The Sheriff is requested to bring these recommendations to the notice of the County Council."

"I again inspected this gaol on the 18th October, when I found seven prisoners in custody, namely, six males and one female. One of the former was under sentence for larceny and one for assault, the others for vagrancy and minor offences. The female prisoner was committed for assault.

"On the occasion of a former visit the sanitary condition of the gaol was referred to, and a recommendation made to have the principal drain reconstructed, together with the branches to the gaol and county buildings.

"The leading drain itself appears to have been properly repaired since then, but no traps have been placed in the branch drains, as recommended, and as a consequence, the smell in the north corridor I found to be quite as bad as when I last visited it, it being simply disgusting and unendurable.

"In view of the fact that the closets adjoining the county buildings, as well as that from the gaol, is discharged into the main sewer, it seems improbable that any better sanitary condition can be effected without traps being introduced at the points designated in my last report.

"If a tank were built adjacent to the sewer, and the down-pipes carried thereto so as to convey the waterfall from the roof of the buildings, an ample supply of water with which to flush the sewer could be had. Without these improvements, the expenditure in the drain itself is, for the present, useless. I learn that the drain has been flushed once by the use of a fire engine at a cost of twenty-five dollars. To keep the sewer in proper condition this process would necessarily have to be frequently repeated, and at such a cost it would, in a very short time, largely exceed the cost of placing the traps and tank as proposed.

"In view of the very unsatisfactory sanitary conditions of this gaol, the Sheriff was requested to call the attention of the Gaol Committee of the County Council to this matter, with a view to having my suggestions adopted, or such other measures employed as would effectually remedy the defects.

"On this occasion I did not find the bedding in such a state of order or cleanliness as on former visits, and as the gaoler was absent on leave, the Sheriff was desired to call his attention to this matter as soon as he returned. An examination of the books shewed that they were kept with proper care, and the entries made in due form."

Gore Bay Lock-up.

Mr. Hayes was instructed by Dr. O'Reilly to visit this lock-up. He made the following report:—

"I have the honour to state that I visited the lock-up at Gore Bay on the night of the 27th June. The building was in good order. The wood-shed recommended by the Inspector in 1881 has not been built, and is said by the keeper to be much needed. He also asks that a well may be dug.

"No prisoners were in custody—indeed, none have been committed for more than two years."

Little Current Lock-up.

Authority was given to Mr. Hayes to inspect this place. His report to Dr. O'Reilly is as under:—

"I have the honour to state that, as instructed, I visited the lock-up at Little Current on the 26th June. There were then no persons in custody, nor had there been any for more than a month. Since the 30th September last, eighteen prisoners have been committed, five of whom were women.

"The register was not properly kept, so I instructed the lock-up keeper as to the right way of making the entries, etc.

"The lock-up building was in a clean condition.

"A well is very much required, as at present all the water needed for the lock-up has to be drawn from the bay and carried to the lock-up, a distance of nearly two hundred yards."

Manitowaning Lock-up.

Mr. Hayes was instructed by Dr. O'Reilly to visit this lock-up. A copy of his report is annexed:—

"I have the honour to state that, on the 25th June, I made an inspection of of the lock-up at Manitowaning.

"No prisoners were in custody, and since the beginning of the official year, only eleven, all males, have been committed. The offences with which these men were charged, were as follows: Drunkenness, six; giving liquor to Indians, two; assault with intent to kill, one; rape, two. Three of these prisoners were sent to Sault Ste. Marie for trial; two were fined: and the rest were imprisoned for short periods. The books were properly kept.

"Since the lock-up was last inspected, a house for the keeper has been added to it. The house is built of stone, and contains five rooms. The work has been well done throughout.

"The lock-up was in a properly kept condition, and a sufficient quantity of supplies was on hand.

"It would be an improvement were the Government lot to be fenced in."

Mattawa Lock-up.

I made an inspection of this lock-up on the 26th September. There were no prisoners in custody at the time of my visit. Each apartment of the lock-up was in excellent order. The yard, too, shewed evidence of receiving proper attention. The keeper complains, however, that the fence surrounding the yard does not afford sufficient security during the heavy snows of winter. At times the enclosure becomes so filled up, as to make egress from it a very easy matter."

Parry Sound Lock-up.

This lock-up was inspected by Mr. Hayes, who made the following report:—

"I have the honour to state, that in accordance with instructions received. I made an inspection of the lock-up at Parry Sound, on the 10th instant.

"There were no prisoners in custody. An examination of the register, which was properly kept, shewed that since the 30th September last, ten male and one female prisoners had been committed. The offences they were charged with were principally assault, drunkenness and larceny. On the 17th November last, one man, who was in custody as a lunatic, succeeded in committing suicide. An inquest was held on the body. The jury found that no one connected with the lock-up was to blame. I told the keeper that a full report of such an occurrence as this should be sent to the Inspector.

"The building was in good order, and cleanly kept, but there are one or two defects in it. The doors require strengthening, as there are not sufficient iron bars in them. The locks also are put inside the cell doors, instead of outside; and a cowl is required on the chimney. As an amount was voted at the last session of the Legislature for repairs to the Government buildings in Parry Sound, I would recommend that the architect's attention be drawn to these defects, with a view to their being remedied."

Silver Islet Lock-up.

Instructions were given to Mr. Hayes to visit this lock-up. He reported upon it to Dr. O'Reilly as under:—

"I beg to state that on the 30th June I made an inspection of the lock-up at Silver Islet. The building was in nice order, having been painted since the date of the last inspection. Iron bedsteads have not been supplied to this place, and consequently the beds are made upon the floors. If a convenient opportunity presents, it would be well to send up three bedsteads of the regulation pattern.

"No prisoners were in custody. A register should be sent to the keeper, as at present he has no books of record."

CENTRAL PRISON OF ONTARIO.

I may commence my report upon this prison, which forms so important a link in the chain of penal institutions of this Province, by making the general statement that it has continued to realize the expectations formed concerning it, by supplying a place to which those criminals, whose offences are not such as to warrant their being sent to the Penitentiary, can be committed and there kept at the hard labour specified in their sentences. Before the establishment of this prison, the addition "with hard labour," to a sentence of confinement in any place, other than the Penitentiary, was, in all cases, a mere farce, and if the sentencing Judge wished to make certain that the prisoner before him should not spend his time in idleness, he had perforce to sentence him to a term in the Penitentiary, when he would have preferred not to have added to the man's punishment the stigma of having been an inmate of that place. Not only does the Central Prison rescue offenders from the degrading influence of long periods of enforced idleness, in company with the vicious and hardened, and enables them to be put at work in which they can, if they so dispose, take an intelligent interest, but it also brings them under the better influences of religion, education and discipline. The results arrived at may be small, but still the chance is given to each man brought into the prison of hearing and learning something that will do him good, morally, mentally, and physically. Those who have perhaps not been inside a house of worship for years, or have not had anyone to point out to them the responsibilities laid on each member of the human race to do his duty to God and his neighbour, are here brought of necessity face to face with their position. Those whose education has been entirely or largely neglected, have now the chance of learning and improving, as a night school has been established in the prison, and has so far been a fair success. Those who do not need instruction are supplied with such reading matter as is suitable. As regards their physical improvement, each man has to come under the influences of discipline, enforced self-restraint, and habits of industry. The drunkard has had to keep sober, the licentious have been restrained, the slothful have been obliged to work for their daily bread, and all have been taught to observe certain rules of order.

This presents a better picture than that which can be given of the state of affairs in the common gaols before the Central Prison was established. Then prisoners sentenced to terms extending from a few days to two years were congregated together generally in utter idleness, their only occupation being to relate, each to the other, his exploits and designs; and, as a rule, not an effort was made in any way to bring them to better courses. Now, the population of any gaol in the Province usually consists of persons waiting trial for various offences, old and infirm vagrants, a few drunkards, and one or two persons under sentence, for short terms for trifling causes.

The system pursued during the past year, in order to provide for the spiritual wants of the inmates of the Central Prison, has been the same as that followed in the three preceding ones. The Roman Catholic prisoners are attended to by a priest delegated by the Archbishop of Toronto to perform that duty, and by lay members of that faith. The arrangements for the carrying on of the Protestant Sunday School and services are still in the hands of the Prisoners' Aid and the Ministeral Associations of Toronto. During the last session of the Legislature, a sum of $1,000 was granted to the first-named association to help them in their work of looking after the prisoners on their discharge, not only from the Central Prison, but from the Reformatory for Females, and from the common gaol. One of the conditions upon which this grant was made,

was that a school master should be paid for by the association, to start a night school at the Central Prison for those inmates, irrespective of denomination, who would be benefited by instruction in the three elementary subjects. This school was formed in April last, and the experiment has been a successful one. The schoolmaster has made a report upon the result of six months' work, and, as it is of much interest, I have appended it to that of the Superintendent of the Sunday School. The officers of the association were also requested to account to the Government for the manner in which the grant of $1,000 was expended; and following the report of the school master will be found statements signed by the President and Secretary of the Association, shewing the nature of the work carried on, and giving details of their expenditure for the year ending 30th September, 1883.

The Central Prison cannot, of course, be expected to reform every criminal who enters it, for it must be remembered it is established solely for short date prisoners (the longest term to which a prisoner can be sentenced to it being two years), and that the time a prisoner comes under the influences above referred to is necessarily very limited, the average period of sentence of each prisoner being a fraction under five months. Considering the material to be worked upon, the time is but very short in which to effect a cure of a deep seated disease; but still those engaged in the work of reformation are hopeful, and while the results cannot always be reduced to statistics, we may trust that more fruit is being produced than we can at first sight preceive.

During the past year the operations of the industrial department have been so far a success that employment has been continually provided for those capable of regularly performing a day's work. Many prisoners are received into the prison who can only, through ill-health or deformity, do the lightest work, or that of the simplest kind requiring but little intelligence. The utterly useless, whose presence and helplessness interferes with the disciplinary routine of the prison, are, as a rule, returned to the common gaols from whence received. I am glad to be able to state that in the past year only one extreme case was reported to me, and the prisoner concerned was sent back to the place he was brought from.

The improvement generally effected in the physique of a prisoner after a short confinement in the prison is somewhat remarkable. A man is admitted weak from the effects of a prolonged debauch, and looking as though he could not possibly work, but after a short course of regular habits and proper diet, the prisoner who was at first regarded as useless becomes a good worker.

I am still desirous of adding to the list of industries carried on in the prison, some additional indoor work, so as to ensure the constant employment of a certain number of prisoners, and to render the prison more independent of the brick yard, in which the work can only be carried on at certain seasons, and then only in fair weather. When the character of the persons to be employed is taken into account, together with the shortness of their terms of confinement, and the many other problems connected with the important question of utilization of prison labour, it will be seen that I may have to wait some time before my desires can be realized.

There is another aspect from which prison officials look at the labour question, and it is the financial one. Not only is there a desire to furnish for the prisoners work that will keep them suitably and intelligently employed, but there is the further desire that the cost of the prison to the community shall be lessened by the products of the labour of those placed under restraint for the benefit of their fellows. My predecessor, in his report upon the prison for the year 1878, after speaking of what that physical material called "prison labour" consists, says that the short sentence system makes the difficult problem of even utilizing such

labour fourfold more difficult, "but when it is expected to become *remunerative*, the task, it will be readily admitted, is little short of herculean." My experience of nearly two years is, I think, leading me to the same conclusion, and therefore I congratulate myself upon being able to report that, taking all things into account, the industrial department, from a financial point of view, has held its own. I do not think that any person with any experience in such matters can reasonably expect that a prison of the character of the Central Prison shall, under the same circumstances, be made self-sustaining. It is often said that similar prisons in the neighbouring Republic are made to pay. So would the Central Prison, were the Government to adopt the principle in force in those paying short date prisons, namely that of collecting from each county of the State the cost of the board of the prisoners received from it. But so far this has not been the policy of the Government, and it is only necessary for me to refer to such a policy in order to take away the basis on which these arguments are founded. But I am willing to maintain that under extraordinary circumstances—such as the ability of the prison authorities to take up, without consideration for the interests or the opposition of free labour, any branch of industry from which a profit would likely be realized, and if the board of the prisoners was collected from the Municipalities—the Central Prison could also be made more than self-sustaining. As these circumstances, however, do not at present exist, we must content ourselves with shewing that cramped and hindered as we are in the matter of employing prison labour, we can, while keeping the peace with free labour, not only find steady employment for our prisoners, but also produce a reasonable amount of revenue.

Having touched upon some of the general questions relating to the Central Prison, I will go more into the detail of its operations during the year ending 30th September. First, as regards the movements of prisoners, the following summary shews their nature, not only during the year under report, but for purposes of comparison, during the preceding one also :—

	1882.		1883.	
In custody at commencement of year (30th September)	338		324	
Committed during the year	767		669	
Recaptured	1		1	
Retransferred from the Asylum	1		1	
Total number in custody during year		1107		995
Discharged on expiration of sentence	728		650	
" " payment of fine	39		46	
" by remission of sentence	6		8	
Retransferred to county gaols as unfit for hard labour	3		1	
Died in the prison hospital	3		2	
Transferred to Lunatic Asylum	0		7	
Escaped	3		6	
Conviction quashed	1		2	
		783		722
Remaining in custody at close of year, (30th September),		324		273

The first thing in this summary which attracts attention is the reduction of 98 in the number of committals to the prison in 1883, as compared with 1882.

This reduction is confined to the number of prisoners sentenced direct to the Central Prison. The figures for the two years are as under:—

	1882.	1883.
Sentenced direct to the Central Prison	390	286
" to Common Gaols and afterwards transferred	374	383
Transferred from Reformatory for Boys	3	..
	767	669

The lesser number of persons sentenced direct to the Prison may be accounted for by the fact that the commitments to the Common Gaols for some of the more serious offences, and for which, upon conviction, a sentence direct to the Prison is often passed, have largely decreased, and consequently there has been a smaller number of criminals to draw from. To prove this statement, I give below a table shewing the number of prisoners committed to the Prison during the past and preceding years for certain indictable offences, viz.:—

	1882.	1883.
Assaults (felonious, indecent, aggravated, etc.)	89	68
Bigamy	5	1
Burglary	12	4
False pretences	13	7
Felony	10	2
Forgery	9	5
Larceny	255	234
Receiving stolen property	10	4
	403	325

The number of persons sentenced to the Common Gaols, and from thence transferred to the Prison, has increased slightly. This is explained by the facts that the commitments to the gaols for drunkenness and vagrancy were larger than in the preceding year, and that it is prisoners sentenced for such offences who form the majority of those transferred.

The explanation I have given above, will, I think, fully shew that the decrease in the direct sentences to the Central Prison is not the result of any lessened confidence on the part of the Judiciary in the ability of the Prison to fulfil its specified purposes, but that it arises solely from a lack of prisoners of that class, who in former years have been sentenced to it directly.

The proportion that the discharges by expiration of sentence bears to total number in custody is just about the same in each of the years. The number released on payment of fine during 1883 is slightly increased, as compared with the previous year.

The sentences of eight prisoners were remitted during 1883, by command of His Excellency, the Governor-General. In these remissions is included that of one prisoner whose case was brought before me by the Warden. He was a young man who had been sentenced to twenty months' imprisonment on three different charges of larceny, making a total sentence of five years. When three and a half years of the sentence had passed, the Warden reported to me that the man's conduct had been most exemplary, and that the long confinement was telling on

his health. Under these circumstances, I made a recommendation that executive clemency should be exercised in the case by discharging the prisoner at the expiration of the fourth year of his imprisonment. This recommendation was approved of, and the prisoner released in March last.

The deaths during the year under report, numbered two, against three in the preceding twelve months. The causes of death were cardiac disease and typhoid fever, respectively.

The remaining feature of interest in the above summary of movements is the statement that seven prisoners were transferred to an Asylum for the Insane. Their removal was effected on the certificates of the Central Prison Surgeon, the County Judge and a medical man, not connected with the institution. Shortly after the transfer of these prisoners, I was making an inspection of the Prison, and took the opportunity of fully enquiring into their antecedents, etc., so far as known to the authorities, and I will here quote the minute I made on the subject, viz., "A more than usual number of prisoners have of late been transferred from the Prison to the Asylum as insane, and during the time devoted to this inspection I have made careful enquiry as to the character of each case, with the view of determining if there were unusual conditions or causes which might give rise to the unhappy state of these unfortunates.

"I do not learn that any of the patients shewed violent or destructive tendencies to such an extent as to indicate the necessity for restraint while they were in the Prison, but it is clear they were possessed, or feigned to be possessed, with hallucinations of one kind or another. Some of them were obedient to prison rules and regulations, doing a fair day's work at their various employments. Two of the men had formerly been inmates of the Prison, one of them serving his sixth term, and both during these former periods had been observed to be of unsound mind and labouring under delusions.

"One of the number had been sentenced for vagrancy; another for neglecting to support his family; three for larceny; one for having in his possession burglars' tools; and one for attempting to shoot with intent to do bodily harm. All of them, beyond question, had, for a length of time been leading criminal and debased lives; but beyond the increased liability, which, I presume, must always follow a life of mental and physical debauch, there does not, so far as I am able to discover, appear to be any extraordinary cause for these cases of insanity.

"It is worthy of note, however, that one of the number effected his escape from the Asylum by adroitly picking a lock, some four or five days after his transmission to that institution; and another has already been discharged as shewing no symptoms of insanity while in the Asylum.

"The incentives, such as freedom from labour, and better opportunities for escape, are strong enough to stimulate these experts at deception to the greatest efforts in simulating insanity; and to such an extent has this practice developed that it may become a necessity to add a building within the Prison enclosure, such as is in use at the Kingston Penitentiary, in which prisoners of this class could be specially treated and watched for a certain length of time."

In the Warden's report, which follows my own, will be found a description of the circumstances connected with the escapes which took place during the year.

Periods of Sentence.

The average length of sentence passed upon each prisoner was, during the past year reduced to four months and twenty-eight days, being shorter than in any year since the opening of the Prison. The reduction is caused by the decrease in the number sentenced direct to Prison, who, of course, are committed for longe

periods than those transferred from the Common Gaols. The usual table shewing the numbers committed each year since the opening of the Prison, and the periods of sentence is again given, with the information for the past year added to it:—

SENTENCE.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.
Under 1 month	.....	.....	15	6	7	11	17	171	125	140
1 month and up to 2	.....	.....	10	2	35	16	23	101	127	105
2 months " " 3	69	13	73	90	100	40	45	38	91	95
3 " " " 4	54	38	110	127	65	43	46	38	.....	.....
4 "	50	56	66	76	.....	59	47	53	60	43
5 "	5	18	7	12	11	11	11	5	10	9
6 "	97	205	186	179	214	224	186	174	199	151
7 "	.....	2	1	1	6	2	6	5	4	5
8 "	6	8	4	1	7	6	3	5	6	5
9 "	4	7	20	1	22	20	27	20	15	9
10 "	1	4	6	.....	4	.....	3	1	4	1
11 "	1	....	2	.....	1	4	.....	2	.....	2
12 "	38	45	94	88	94	93	87	72	69	67
13 "	.....	.....	1	.....	.....	1	.....	.....	1	.....
14 "	.....	.....	.....	2	.....	1	.....	1	2	2
15 "	2	1	7	1	5	1	6	4	3	3
16 "	.....	.....	.....	.....	2	1	4	.....	1	2
17 "	.....	.....	.....	.....	1	.....	.....	.....	1	.....
18 "	10	12	17	27	30	17	23	23	11	13
19 "	1	.....	.....	.....	1	.....	1	.....	.....	.....
20 "	2	.....	.....	.....	2	2	.....	1	2	2
21 "	.....	.....	1	.....	1	.....	2	3	.....	.....
22 "	1	.....	1	2	5	2	1	2	2	.....
23 "	4	3	8	20	8	7	10	12	20	5
24 "	10	14	8	18	8	3	9	7	11	10
Boys transferred from Reformatory owing to incorrigibility. 2½ years	1	.....	.....	.....	.....	.....	.....	.....	1	.....
3 "	3	.....	.....	1	2	1	1	3	2	.....
3½ "	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
4 "	5	.....	.....	.....	1	1	2	3	.....	.....
4½ "	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
5 "	4	.....	.....	1	4	1	.....	1	.....	.....
Totals	370	426	637	655	636	567	560	745	767	669
Average period of sentence each year	6 12-30 Months.	7 3-30 M'ths.	6 20-30 Months.	5 22 30 Months.	7 10-30 Months.	7 3-30 M'ths.	7 14-30 Months.	5 12-30 Months.	5 12-30 Months.	4 28-30 Mth's.

General Statistics.

Statistics relating to the total number of prisoners committed to the prison, as well as to those sentenced during the past year are appended:—

Nationalities.	Prisoners committed during the year.	Number committed up to 30th Sept. 1883.
Canadian	333	2,780
Irish	108	1,052
English	110	1,052
United States	64	649
Scotch	33	326
Other countries and unknown	21	181
	669	6,040

Religious Denominations.

Church of England	201	2,304
Roman Catholic	249	2,063
Presbyterian	86	627
Methodist	87	716
Other denominations, etc.	46	330
	669	6,040

Civil Condition.

Married	247	1,878
Single	422	4,162
	669	6,040

Social Habits.

Temperate	86	1,366
Intemperate	583	4,674
	669	6,040

Educational Status.

Could read and write	510	4,479
Could read only	62	679
Could neither read nor write	97	882
	669	6,040

Discipline.

The discipline of the Prison during the year was well maintained without any undue recourse to punishment. It cannot be expected, however, that some trouble will not be met with in dealing with large numbers of men of criminal and vicious habits, whose only law before their commitment has been their own wills. While the majority of the prisoners are amendable to the rules, now and then a prisoner is received who, from the moment of his admission, seems to make it his study to be as disobedient, lazy and refractory as he possibly can be. During the year there were three men of this class who forced themselves into special notice, and who, by their example and influence, were the cause of much trouble. In each case corporal punishment had finally to be resorted to, after the prisoners had been repeatedly punished by deprivations of privileges and meals, and by confinement in the dark cell, and after many warnings what their insubordinate conduct, if persisted in, would result in. In one instance twenty-five lashes were administered, another fifteen, and in the third, ten. Two of the men were punished on the same day, in March last, and since then, up to the close of the year, no other floggings had to be administered. It is very apparent that the evil example set by such insubordinate prisoners must be checked as soon as possible, if the Prison is to be conducted with order and safety.

There is one other occurrence in connection with the prisoners, which, although it did not take place until after the close of the official year, I deem it well to speak of in this report; I refer to the case of the prisoner Scott, who was shot dead by a guard whilst attempting to escape. Much as this occurrence is to be regretted, it must be remembered that the prisoner had full knowledge of the probable results of his act. An inquest was held on the unfortunate man's body.

As the result is of considerable interest to persons connected with penal institutions, I append a copy of the Coroner's very able summing up, together with the verdict of the jury, and a statement made after the conclusion of the inquest by the County Crown Attorney, viz.:—

In summing up the Coroner said: "The facts of the case are briefly these: On Tuesday last, 23rd October, Harte and Stafford, two guards of the Ontario Central Prison, were bringing home to that institution two prisoners named Scott and Stephens. At a convenient point on the road, viz., where the Toronto, Grey and Bruce railway track crosses King Street, these two men sprang out of the line and attempted to escape by running up the track. They were at once pursued by Stafford, but as he was unable to overtake them, and saw no way of capturing them being unarmed, he called on them to stop or they would be shot. As they took no notice of this warning, he called on Harte to fire on them. This Harte did, the bullet striking the man Robert Scott in the back of the neck, and passing through the spine, made exit through the upper lip. Scott fell lifeless in his tracks. There is, therefore, no doubt as to how, when, where, and by what means Robert Scott came to his death, but the question which you will more particularly have to consider is, whether or not Harte is justified in what he did, or is he guilty of murder?

"To enable you the more easily to form an opinion, I will read you some extracts from the best authorities on this matter. Beginning with Lord Chief Justice Jervis, whose exposition of the law applies most directly to this case, he says (speaking of killing by officers and others), 'So, although he may be justified in killing a felon who cannot be otherwise overtaken, yet for a misdemeanour he must not kill the accused, though there be a warrant to apprehend him, and he cannot be otherwise overtaken.' Lord Hale, Hawkins, Foster, etc., all use nearly the same words. We have the same in Archbold's Criminal Evidence, page 703 of the latest edition. The common law, then, says this, that it is murder for an officer of justice to kill anyone except a felon, if he resists or attempts to escape. You will see now why the Crown Attorney put in the certified copy of the indictment in Scott's case. Scott was not a felon, and therefore by this old law Harte would be guilty of murder. We are relieved from the consideration whether or not the law I have just stated applies to prisoners in gaol after conviction, as this is governed by regulations passed by both the Dominion and Local Legislatures.

"It is different in the case of a constable about to arrest a prisoner. He knows what the crime is of which he is charged, but no prison guard can be expected to know the crimes for which the convicts are undergoing sentence, and a guard could not be expected on the instant to call to mind whether a convict was or was not a felon. An escape, too, might be attempted in the dark, when it would be impossible to distinguish a felon from a breaker of the peace. So that unless some regulation gave power to kill all who attempted to escape, it would be impossible to govern or restrain the convicts in a prison. But was the guard Harte acting under the common law when he shot Robert Scott? The administration of criminal justice rests with the Local Legislature, and the right to legislate for criminal law, as apart from its administration, by the British North America Act, for convicts from this Province whose term of imprisonment do not exceed two years. I will read you the Dominion Act. It is 36 Victoria, chap. 69, and is entitled 'An Act respecting the Central Prison for the Province of Ontario.' I would particularly call your attention to Section 4 of this Act. It reads:—'The Lieutenant-Governor of Ontario, by Order-in-Council may, from time to time, authorize, direct, or sanction the employment upon any specific work or duty,

without or beyond the walls or limits of such Central Prison, of any of the prisoners confined or sentenced to be imprisoned therein; and all such prisoners shall, during such last-mentioned employment, be subject to all the rules, regulations, and discipline of the said Central Prison, so far as the same may be applicable, and to such other regulations for the purpose of preventing escapes and otherwise, as may be approved by the said Lieutenant-Governor in that behalf; provided when any such prisoner or prisoners shall be so employed without the walls or limits of such Central Prison, it shall only be done under the strictest care and supervision of officers appointed to that duty.'

"According to this then, the rules and regulations which govern this institution, if approved of by the Lieut.-Governor in Council, become absolute law.

"Let us examine these rules. In Rule 13 'The Warden is responsible that the guards are properly armed, that their rifles are in good order, and that they have a sufficient supply of ammunition; and that every means are taken to ensure the security of the prisoners during working hours.' In Rule 136 'The first and most important duty of a guard is, at all times, to maintain the safe custody of the prisoners, and should prisoners attempt to escape, the laws of the Province justify the shooting of such, or of any persons who may be assisting in such attempt, if such action be found necessary in order to prevent the escape. Except in extreme cases, offenders should be distinctly warned of the consequence, before shooting is resorted to.' In Rule 18, of 'rules for prisoners,' after speaking of punishments, we find, 'and the Warden is authorized to employ and permit the use of weapons by the prison guards, to put down insurrection by force, and *to prevent escapes at all hazards from the Prison.*' Immediately below this we find:—'Approved by Order-in-Council, 31st December, 1881,' and signed J. W. Langmuir, Inspector; J. G. Scott, Clerk, Executive Council. Now, although we must regret that any prisoner should be so unexpectedly hurled into the presence of his Maker as Scott was, still I think it well that it should be understood that a prisoner in this Prison, who chooses to take his life in his hand, and attempt to escape, does so at his peril, and may be shot down as Robert Scott was. This is not a common gaol. In this building are some most desperate characters. Every prisoner in here is serving a sentence. He has been duly tried, convicted, and sentenced, and from this case we see that the guards will carry out, to the letter, the rules and regulations that they are sworn to obey.

"I hold, therefore, that when any guard of this Prison finds that a prisoner is escaping, and after having warned him, still finds he is determined to pursue his reckless course, and being unable to capture him in any other way, fires at him and wounds or instantly kills him, that guard, so doing, is, in the eyes of the law, blameless, as he is only carrying out a duty which his office imposes upon him.

"It is not my province to criticize the reasonableness or unreasonableness of regulations enacted by the authority upon whom the duty of governing this Prison is imposed, but I cannot forbear pointing out how impossible it would be to keep under control the large body of prisoners confined in the Ontario Central Prison, or to prevent insurrection, or bold and open prison breach, if the guards were not clothed with authority such as is conferred by these rules."

The jury retired after the delivery of the above charge, and after half-an-hour's deliberation presented the following verdict:—

"That the deceased Robert Scott came to his death by a ball fired from a rifle in the hands of Guard Harte, on Tuesday, the 23rd October, on the track of the Toronto, Grey, and Bruce railway, while making his escape from the custody of the said guard. That the said Guard Harte was fully justified in the act, and in no way exceeded his duty.

"The jury earnestly recommend that greater precautions be taken to prevent escape, and would suggest that when prisoners are sent outside the Prison grounds they should be chained together while passing to and from work on the public highways."

THE CROWN ATTORNEY'S STATEMENT.—"Police constables and officers have not the same power as guards and officers of convict prisons. The latter are justified in shooting and killing any convict if necessary to prevent an escape, but ordinary constables or police officers are not entitled to shoot and kill an escaping prisoner who offers no resistance, unless (1) the prisoner is accused of felony, and (2) his escape cannot otherwise be prevented. If such escaping prisoner is charged with misdemeanour merely or even if he be charged with felony and his escape can be prevented without killing him, the constable who kills him is liable to be tried for manslaughter at the least, and possibly murder. It is obvious that greater powers of control should be entrusted to guards in convict prisons, because the convicts are not merely accused, but convicted and legally adjudged to suffer imprisonment for their crime. Unless the officers guarding convicts had power to kill on the instant any of them attempting to escape, the convicts might rise *en masse*, overpower their guards, and effect their own deliverance. Therefore the Dominion Legislature has enacted that all prisoners confined in the Central Prison shall be subject to all rules and regulations approved by the Lieutenant-Governor of Ontario, and the Governor-in-Council has approved of rules and regulations which permit the guards and officers of the Prison to shoot any convict attempting to escape."

The recommendation of the Jury regarding the manner of taking prisioners to and from work has been acted upon.

VISITS OF INSPECTION.

I frequently visited the Prison during the year, when any special circumstances made it necessary for me to do so, and in addition to these casual visits, I made two minute inspections of every portion of the Prison—one such visit being continued over four days. The following is a copy of the report made by me to the Government thereupon:—

"My first official inspection of this Prison for the current year commenced on the morning of the 7th February and continued for a period of four days.

"I made an examination of the Warden's books and found them well and correctly kept. They comprise an Entrance Register, a Discharge Register, a Distribution of Labour Book, an Industrial Labour Book, an Offence and Punishment-Book, and a Discharged Prisoners' Clothing Book. The hospital books were also found to be in a satisfactory condition.

"At the time of my visit there was in custody 326 prisoners, being a decrease of 54 as compared with the corresponding period of last year.

"The distribution of prisoners at employment for the day was as follows:—

"In the Broom Shop	104	
In the North Shop	71	
At Domestic Work	53	
In the Brickyard	43	
In the Tailor Shop	13	
In Shoe Shop	12	
Carpenters and Blacksmiths	8	
Shovelling snow	9	
In the Hospital	13	
		326

"Although there were a greater number of inmates in the hospital than is usually the case, none of them were suffering from diseases of a serious nature, the majority being treated for colds and slight bronchial affections. The hospital, as the result of the care and attention bestowed upon it, is in a highly satisfactory condition.

"The industrial operations of the Prison are, on the whole, progressing satisfactorily. This being especially the case with the broom shop under the control of Messrs. Nelson and Sons, and the north shop which is devoted to the manufacture of wooden ware, and is under the control of Messrs. Brandon and Co. The tailor and shoe shops are also doing a fair share of work, taking into consideration the fact that there are no prisoners belonging to either of these trades at present in custody. In consequence of this absence of skilled workmen in these departments, the work has to be done by such men as are presumably fitted to perform it to the best advantage.

"Upon examination of the Labour Book, I found that quite a considerable amount of time had recently been lost owing to the severity of the weather and the great depth of snow. In January alone 195 days were written off the labour time of the gang of men employed in the brickyard. In view of this state of affairs, I am more strongly convinced than ever of the necessity of procuring work for the prisoners which, during the winter season at least, could be performed under shelter.

"I found the Prison, in all respects, in a clean and orderly condition, as far as its structural character would permit of.

"The defects which I have before noted in the structural condition of the kitchen still exist. The ventilation is exceedingly defective. Although the room is 45 by 54 feet with a ceiling ten feet in height, yet, at the time of my visit the vapour arising from the cooking operations was so dense that it was utterly impossible to distinguish ordinary objects at a distance of fifteen feet. I was informed by the cook that this was not an extraordinary occurrence, but was the usual condition of the kitchen while the cooking for the midday meal was in progress.

"The joisting and floors of the laundry and bathroom are becoming much decayed, and, in fact, will soon be in an unsafe condition. The steam arising from the laundry, which is situated directly below the bathroom, seems to have been the chief cause of this decayed condition of the wood. This matter will require prompt attention as soon as the weather moderates, so that the work of renewal can be properly performed.

"There were no prisoners under punishment by being confined in the dark cell, or by being deprived of a portion of the dietary.

"There were, however, 16 who were undergoing deprivation by the withholding of this usual allowance of tobacco, or by a temporary refusal of permission to write to their friends or receive visits from them.

"During the four days of my visit I gave every prisoner the usual opportunity to state any grievances or causes for complaint. A few took advantage of it; but the majority of their complaints were of the most frivolous character, and an investigation into the grievances of two of them, which at first appeared to be of a substantial character, proved them also to be without foundation. As a means of determining the reliability of statements made by three others to the effect that they were not sufficiently fed, I compared their weights with those which were recorded when they entered the Prison, and I found one man had been an inmate for four and a-half months, and that during that short time he had gained 22 pounds; another, who entered the Prison 15 months ago, shewed a gain of 13 pounds, and the third man had been in the Prison 7 months and had gained one pound. Taking the increase in weight as an evidence as to whether or not these

men had received proper treatment and sufficient food. I could only regard their complaints as unworthy of notice. I thought it wise, however, to make a further investigation in this direction, with a view of ascertaining whether there could be cause for any complaint whatever regarding the dietary of the prisoners and their treatment as a whole. As the result of this investigation coupled with observations made during previous visits, I was led to the conclusion that the prisoners were well and properly treated in every respect, and that their food was ample and sufficiently nutritious.

"From the books of the Prison, I have extracted the following facts, as bearing somewhat upon the question of the supply of food to the prisoners:

"From the 1st October, 1882, to 28th January, 1883, 222 prisoners were discharged; of this number, 151 gained a total of 1,419 pounds, or an average of nine pounds six ounces each during their stay in the Prison; 16 neither gained nor lost; and 45 lost in all 202 pounds, or an average of four pounds eight ounces each."

The principal object of my second visit to the Central Prison was to determine the best method of carrying out certain improvements to be made during the season, a sum of money having been votedfor such purpose. The consideration of these matters was deferred on the occasion of a former visit in consequence of the early date, and inability to arrive at a satisfactory conclusion in regard to work which required the open season for its proper investigation and satisfactory prosecution. I therefore visited the Prison on the 3rd May, and subsequently reported as under:—

"The flooring of the laundry and bathroom, the condition of which was noted in my last minutes, has been relaid, and the work substantially and satisfactorily done, and, when the refittings are completed, will make a great improvement in those apartments.

"The building formerly used as a drying-kiln, but latterly as a roothouse, requires alterations, in order to make it serviceable for its present purpose. It must be enlarged to afford sufficient room and security for storage of the winter's supply of vegetables. This will be done by adding six feet to its width on the north side of the building. A wall of brick, hollow, will form an ample protection from the frost, and afford the required storage-room.

"Representations having been made by Messrs. Nelson and Sons as to the unsatisfactory condition of the drying-room, mainly in consequence of the want of a free current of air, especially during the summer season, the Warden was authorized to open four windows in the west end of the upper flat of the south shop, which is now used by them for the purpose named. This will, no doubt, secure the required ventilation, without injuring the building for any other purpose to which in time it might be applied.

"On account of the defective attachments for opening and closing the ventilators in the cell houses, the suggestion to work them by lever similar in plan to that by which the cell gates are opened and closed, was approved, the necessary work and fitting to be done by prison labour.

"In consequence of leakage, the ceilings of the Warden's quarters are becoming much damaged, and the repairs are required to be made immediately to prevent further injury to the plastering. As the cause is to be attributed to the use of iron tubing, which is becoming rusted and worn, the Warden was authorized to substitute lead where required, and thereby provide against a like occurrence.

"By the operations of the burglars who lately forced an entrance into the Bursar's office, the safe, which for a length of time has been in use there, was left a complete wreck, and could not be properly repaired or refitted. The Bursar

was therefore authorized to make enquiry with the view of purchasing a suitable one to replace it, and to submit for approval the description and price.

"On the morning of my visit, there were in custody 294 prisoners, the majority of whom were employed in the two principal industries, namely, in the making of brooms and woodenware. In the former there were ninety-one prisoners and in the latter eighty-six.

"The others were working in the tailor, shoe, carpenter, and machine shops, and also on the Prison grounds.

"In the hospital there were twelve sick and convalescent.

"The health of the institution had latterly been well maintained, with the exception of two under treatment in the hospital, none of the inmates had ailments of a serious character.

"The industries of the Prison were being vigorously prosecuted, and the accumulation of raw material, stock, and manufactured wares is evidence of the activity in this respect.

"A general examination of the Prison, Hospital, grounds, and the buildings in all their apartments, together with the workshops, shewed them to be in their usual state of cleanliness and neatness.

"Preparations for resuming work in the brickyard were being made. In consequence, however, of the largely reduced number of inmates, it is questionable whether the output of this industry will be equal to that of the two former seasons."

Structural Improvements.

In the report upon my first inspection, I refer to the very unsatisfactory condition of the Prison kitchen, and I have been in consultation with the Warden and the Provincial Architect, with a view to arriving at some plan by which this portion of the domestic offices may be made more efficient. An appropriation to make the necessary alterations will be recommended, when some definite scheme is formed.

It is very desirable that the dark or punishment cells should not be in the same block as the ordinary sleeping cells. Under the present circumstances a refractory prisoner under punishment in the dark cell can, if he chooses, disturb the rest of all those about him, and keep them in a discontented state. I have, therefore, been considering the advisability of constructing another building to contain a kitchen and punishment cells.

Another want is a range of say six or nine cells for the reception of prisoners brought into the Prison by the bailiff at night. These men or their clothing are often dirty, and as they cannot be stripped and cleaned at night, they have to be put into one of the ordinary cells, which they contaminate. Provision can, I think, be made to meet this want if the necessary funds be voted.

Maintenance Expenditures.

A detailed statment is given below of the expenditures incurred in maintaining the Central Prison during the year ending 30th September, 1883, and the average daily cost per prisoner is also shewn. The total expenditure and average daily cost in the previous year are likewise given:—

SERVICE.	Total expenditure.	Average daily cost per prisoner.
	$ cts.	cts.
Medicine and medical comforts	345 36	0·325
Meat and fish	9,148 17	8·4
Flour, bread and meal	4,749 15	4·375
Groceries	5,081 07	4·675
Bedding, clothing, and shoes	3,148 52	2·9
Fuel	4,437 68	4·1
Gas, oil, and candles	1,017 30	0·950
Laundry, soap and cleaning	835 97	0·775
Stationery, advertising and printing	585 42	0·550
Library, school, and religious instruction	700 00	0·650
Water	250 00	0·225
Furniture and furnishings	209 89	0·2
Stable expenses, forage, etc	159 25	0·150
Repairs, ordinary	503 17	0·475
Unenumerated	662 15	0·6
Farm and grounds	357 25	0·350
Salaries and wages	18,811 64	17·3
Total	51,001 99	47·0
Previous year	55,130 00	45·6

These figures call for but little comment. It will be seen that the aggregate expenditure is decreased by $4,128.01, and the average daily cost is increased by one cent and two-fifths. The daily cost for the food supplies is a fraction of a cent lower than in last year; whilst there is an increase in the daily cost in those items of fuel, light, and wages, which are not affected by the decrease in the population. The expenditure for coal last year was greater than in the previous one, owing largely, of course, to the extreme coldness of the winter season. The cost of lighting, too, was increased, but the increase is met by the much greater efficiency of the light now afforded the prisoners in the evening. The gas was, during the year, so arranged as to light up each cell sufficiently to enable the prisoners to read by it, instead of by candles in the cells as formerly. The item of salaries and wages is also slightly increased, owing to several of the guards gaining the increase due to them on completing a further year's service, and to other necessary changes in the staff. It was found desirable to appoint one of the guards, longest in the service, Sergeant of the Prison, and to make a little addition to his pay as compensation for the increased duties and responsibilities placed upon him.

Manufacturing Expenditures.

A statement of these is appended, and to them is added the cost of maintaining the Prison:—

Carpenter and Cabinet Shop	$ 400 47
Tailor Shop	3,389 48
Shoe Shop	4,615 07
Blacksmith's Shop	390 52
Broom Shop	343 98
Woodenware Department	215 19
Brickyard	1,978 11
Gardening	26 50
Stationery, Advertising, and Printing	223 37
Miscellaneous	751 97
Salaries and Wages	4,656 60
Manufacturing Expenditure	$16,991 26
Maintenance Expenditure	51,001 99
Total Expenses	$67,993 25

The cost of keeping up the Industrial Department in the previous year was $20,156.61, and the total maintenance and manufacturing expenses were $75,286.61, shewing a decrease of $7,293.36 in favour of the year under report.

Prison Labour and Revenue.

The statement given below shews the number of days' work performed by the prisoners, and in what manner, during the past and preceding years:—

	1882.	1883.	
In the Broom shop for contractors	26,635	27,780	days.
" Wooden-ware shop for contractors	20,184	23,346	"
Total contract work	46,819	51,126	"
In the Brickyard	18,228	5,659	"
" Tailor's Shop	4,380	3,234	"
" Shoe Shop	2,349	2,812	"
" Carpenter's Shop	1,338	1,043	"
" Tinsmith's Shop	267	276	"
" Blacksmith's Shop	580	600	"
In permanent improvements and work on Prison and Reformatory grounds	1,857	4,718	"
Number of days of productive labour	75,818	69,468	"
" " domestic work	22,196	20,556	"
Total number of days worked	98,014	90,024	"

From the above summary, it will be seen that there was during 1883 a considerable falling off in the aggregate number of days of productive labour, caused by the smaller prison population; but I am glad to be able to state that, if the percentage which the number of days of remunerative labour bears to the total days' stay of the prisoners be taken, it will be found that the advantage lies with 1883. In that year, the total stay was equal to 108,722 days, and the percentage which the productive labour bears to it is 63.89—the corresponding figures for 1882 are 120,755 and 62.78. It will be at once noticed that there was a very large reduction in the amount of work done in the brickyard. This is accounted for by the fact that, as a lesser number of prisoners were committed to the Prison, a larger proportion of the whole than usual could be employed to more profit in the other industries, and especially in the broom and wooden-ware shops, the scope of which was increased during the year. The carrying out of an arrangement by which the cultivation of the garden of the Reformatory for Females was done by prisoners, also afforded another opportunity for employing much of the unskilled labour that would otherwise have been expended in the brickyard.

The decrease in the number of days' labour in the tailor's shop was caused by a falling off in the commitments of men having a knowledge of tailoring, and not by any lack of work for the shop.

The revenue of the various branches of the industrial department of the Prison during the two years was as follows:—

	1882.	1883.
Broom Shop, hire of prisoners	$ 7,638 04	$8,925 90
Woodenware Shop, hire of prisoners	5,594 81	7,005 75
Brickyard, sales	11,445 15	3,414 60
Tailor's Shop, sales	4,106 35	1,571 27
Shoe " "	2,264 98	4,460 20
Carpenter's Shop, sales	361 87	474 37
Blacksmith's " "	493 45	53 99
Gardening for Reformatory	....	387 13
Miscellaneous	....	471 25
	$31,904 65	$26,764 46

All the principal industries shew a satisfactory increase, except the brickyard and tailor's shop. As regards the former, the output was small for two reasons —first, owing to the decreased number of men employed in the yard; and secondly, to the lateness of the season at which work could be commenced. The sales were for various reasons smaller than usual, but there are in the yard bricks valued at $14,000, and which can be disposed of profitably when the opportunity arises.

The decrease in the revenue of the tailor's shop is caused principally by the amount due from the maintenance department of the Prison for making and repairing clothing being unpaid at the end of the year. Less work was also done in the shop, as has already been explained.

Taking all things into account, I am on the whole fairly well satisfied with the results of the past year's operations of the industrial department of the Prison, for not only has suitable employment been found for the prisoners, but considerable revenue has been earned by their labour.

Transfer of Prisoners.

The system of transferring prisoners to the Central Prison by a bailiff specially employed for that purpose has been continued, and with satisfactory results. In view of the decreased number transferred, I was not unprepared to find that the average cost of transferring each prisoner was much higher than in the preceding year, but I am glad to say that the increase was only sixteen cents per head. A detailed table of expenses is subjoined:—

WHEN TRANSFERRED.	Number transferred.	Prisoners' fares to Prison.	Travelling expenses and salary of Bailiff.	Cab-hire, food, etc., for prisoners.	Total.
		$ c.	$ c.	$ c.	$ c.
October, 1882	66	134 55	195 75	52 85	383 15
November, "	46	130 50	201 50	34 05	366 05
December, "	50	80 35	174 40	36 15	290 90
January, 1883	65	133 10	175 25	41 45	349 80
February, "	22	56 80	173 30	22 10	252 20
March, "	46	82 85	175 85	37 75	296 45
April, "	60	62 75	157 20	38 25	258 20
May, "	54	89 25	165 45	39 00	293 70
June, "	64	110 45	182 20	41 15	333 80
July, "	70	108 85	180 85	43 90	333 60
August, "	75	133 15	190 30	47 30	370 75
September, "	55	67 05	162 35	39 75	269 15
Total	673	1,189 65	2,134 40	473 70	3,797 75
Average expense incurred per prisoner		1 77	3 17	0 70	5 64
Preceding year	770	1 94	2 92	0 62	5 48

Note.—This includes the cost of returning a prisoner unfit to work to Gaol, and bringing back an escaped prisoner and one discharged from the Asylum.

Return of Discharged Prisoners.

Of the prisoners discharged, 346 were returned to the places they were committed from. Particulars of the expenditures incurred in doing this are subjoined :—

WHERE SENT.	Number of prisoners.	Amount paid.
		$ cts.
Barrie	9	17 95
Brockville	8	37 45
Brantford	7	14 00
Berlin	13	25 30
Belleville	14	41 35
Buffalo	2	6 40
Brampton	2	1 30
Beaverton	1	2 30
Chatham	20	106 00
Cayuga	1	3 00
Cornwall	6	37 80
Cobourg	5	10 80
Detroit	3	15 00
Dundas	1	1 30
Gananoque	1	3 55
Goderich	4	16 00
Guelph	9	13 50
Galt	2	3 40
Gilford	1	1 45
Hamilton	71	84 80
Ingersoll	1	2 90
Kingston	18	54 40
London	36	119 20
Muskoka	1	3 50
Newmarket	1	1 00
Napanee	2	5 50
Niagara	1	2 65
Ottawa	15	94 85
Orangeville	2	3 10
Owen Sound	2	7 30
Oshawa	1	85
Port Hope	4	4 25
Port Colborne	2	5 70
Peterborough	4	11 20
Picton	1	3 75
Perth	2	11 90
Parkhill	1	3 80
Suspension Bridge	3	7 80
Sandwich	2	10 00
Sarnia	5	25 00
Simcoe	5	12 20
St. Thomas	9	34 65
St. Catharines	7	14 25
Stratford	1	2 75
Southampton	1	4 55
Tyendinaga	1	3 15
Tilsonburg	2	6 00
Walkerton	1	3 00
Windsor	20	100 00
Wingham	1	4 00
Woodstock	4	10 60
Welland	6	13 80
Whitby	3	2 50
Uxbridge	1	1 20
Total	346	$1033 95

Fines to the extent of $497.70 were received from prisoners, and this amount was used to defray, in part, the expense of returning prisoners, the balance of $536.75 being charged to the Fund for the Administration of Criminal Justice.

Following this report are those of the Warden of the Central Prison (with statistical tables), the Surgeon, the Superintendent of the Sunday-school, the School-master, and a statement of the work done by the Prisoners' Aid Society is also appended.

ANNUAL REPORT OF THE WARDEN OF THE CENTRAL PRISON OF ONTARIO.

R. Christie, Esq.,

Inspector of Prisons and Public Charities, Ontario:

Sir,—I have the honour to submit the Tenth Annual Statistical Report of the Central Prison for the year ending 30th September, 1883.

A brief reference to a few matters connected with the working of the Prison may be of some interest as a review of the year's operations; and while to some extent there must necessarily be a sameness in dry statistical figures, yet at the present time, when the question of what is best to be done to reclaim the inmates of our criminal institutions, and stay the ever-increasing accessions from the youth of our cities to the army of criminals who prey upon the public, is engaging so much attention among the philanthrophic in this city, and in the neighbouring Republic, these, even, may be interesting when brought in comparison with previous reports, as a help to a better understanding of the movements of the criminal population; how they are cared for, and what is being done to reform them. The Central Prison was intended not only to be for the safe keeping of those undergoing sentence, but also to be reformatory in its treatment and operations, and in my management I have kept that steadily in view. That I have attained to anything approaching what I thought to reach when I entered upon my duties three years ago, I frankly confess I have not. I had but a very imperfect idea of the material I was to work upon.

In common with others similarly situated, I have been desirous that the institution under my charge should be so conducted in its every detail as to reflect credit on its management; that its discipline should be maintained upon correct and elevating principles: strict and orderly, not necessarily severe; and its industries conducted so as to secure the best results, and thereby not only lessen the cost to the Province but at the same time, by keeping the prisoners actively employed at such work as they were capable of performing, leading them to see that toil is not without its sweets; and that one of the first principles of reformation from an idle or criminal life is diligence in some useful trade or calling, and in this respect the prison is doing a good work.

Taking the accompanying report in the order in which the statistices are given, we find that on the 30th September, 1882, there remained in custody 324 prisoners. During the year there was received 671, as against 769 the previous year.

Apart from those who were discharged on expiration of sentence, forty-six were liberated on payment of fines, ranging from $4.25 up to $44.00, and eight by remission of sentence. Two deaths occurred, as against three in 1882, and six in 1881. The health of the prisoners has been singularly good throughout the year. The highest daily average under treatment in the hospital was in the month of March, when it reached 8·19, and the daily average for the year has been the lowest since the hospital was opened, although two prisoners were in under treatment for four and six months respectively, which greatly increased the average, and for some weeks the hospital has been without a patient.

Seven were transferred to the Asylum for the insane, and one of these made his escape a few days afterward, and a short time after his sentence would have expired he

returned to the city and I had him arrested, with the view of having him serve out the unexpired portion of his sentence, but the Court before whom he was tried for breaking from custody, decided that he could not be committed to prison direct, and he was set at liberty. Of the others one was transferred back to the prison as being quite sane, and after serving out his sentence was disharged, but was only out a few days when he was again arrested and sent back for six months, his fifth term in the Central Prison; and another was set at liberty after being detained a few days.

Six prisoners escaped during the year. The first, James Moore, who was employed as fireman, escaped between seven and half-past seven p.m., on Sunday, the 8th October. According to the custom which had been followed since the prison was opened, he was selected for the work, having been similarly employed outside, and thought safe to be trusted part of the time alone; since his family lived in the city, and when he asked to get the job he gave assurance that he would be attentive to his work, and meant to serve out his term. The tower and yard guards are withdrawn at noon on Sunday, and taking advantage of the time he was alone, made himself a temporary ladder, and a little before the night guard went on duty made his escape, and having an accomplice it is supposed, made good his way to Detroit.

The second, named Thomas Doran, who had but about forty days to serve, while employed taking up roots in the field in rear of the prison, walked away on the afternoon of the 23rd October unseen by the guard in charge, and a few days afterwards was arrested in Kingston, and sentenced to four years in the Penitentiary. He was runner or messenger for the gang, and his absence in consequence was not so readily observed by the guard.

The third and fourth were two Frenchmen from Montreal, named Charles Lahimiere, *alias* Light, and Joseph Houll, on the 6th March. They were employed in the kitchen. At about 5 o'clock a.m., the cook opened the grated door between the kitchen and the stores' department, taking two prisoners with him to carry through the meat for breakfast. It is supposed that the two above named followed him on his way to the butcher shop, and secreted themselves in one of the rooms under the Bursar's office, then when the cook returned, knowing where to find the key, they opened the door and walked out, and I have not been able to find any trace of them since. On returning to the kitchen with the prisoners and the meat, the cook went out with the bakers, and after putting them to work came back to the kitchen, and missed his men. Search was immediately made for them, when it was discovered that the key of the grated door, which was under the charge of the storekeeper, and should have been locked in his office, was left by some one where the fugitives could easily get it, so that they had but to unlock the door and walk out.

The fifth was Edward Welland, on the 24th August. He had been in the prison but a few days, and being an emaciated sickly looking man, about whom there was some doubts as to his sanity, he was not put to any steady employment, and permitted at certain times to walk about the yard under supervision. About 10.30 a.m., a Grand Trunk locomotive came into the yard to take out some cars, and it is surmised that he secreted himself, unseen by the guards, on some part of the engine or tender. If he was taken out upon either, and it is impossible to account for his escape in any other way, as the cars were closely examined outside and inside, it would almost lead one to conclude that collusion existed between the fireman and driver and him. Not suspecting anything of this sort, the guards did not search the engine or tender, a precaution which has been taken in every instance since.

The sixth, a man named William Henry, with many alaises, who had been employed as a machinist, was taken out by a guard who was acting as assistant engineer, to repair a pump in the brickyard, on the evening of the 3rd September, after work had ceased, although warned by the Deputy Warden that it was unsafe to take him, as he was an old gaol bird, and had escaped from prison before, he was confident of his ability to keep him, and to some extent disregarded the warning given. The consequence was that the prisoner, under cover of the darkness, made his escape, and was not seen afterward.

Nothing connected with prison management occasions so much anxiety and annoyance, or reflects so much upon the efficiency of the staff, as the escape of prisoners, and it must be confessed that carelessness to some degree was manifest, otherwise the majority of these escapes might have been prevented.

This is not the only prison where difficulty is experienced in getting men as guards qualified to oversee prisoners and take an interest in the duties devolving upon them; and while I have associated with me a number of good men, who are reliable and attentive to their work, I regret I cannot say that this is characteristic of all. The difficulty I refer to is not from the want of applicants for the position of guards, but to get them to realize after their appointment that it is one of responsibility, where their influence is either for good in promoting the interests of the prison, or for evil if they are merely eye-servants, incapable of realizing what rests upon them, and who retard rather than assist in the police of the prison. I regret that it should be necessary to make this statement in my annual report, but having to record six escapes in one year under a staff sufficient for the number of prisoners, the odium should rest upon those who are responsible for them.

The average term of sentence was shorter than that of 1882, when it was but five months and twelve days, being only four months and twenty-eight days. About one-half, or 340 of the 669, being from one to three months, and under these all the various offences against the person and property are represented except forgery and felony, even to robbery and wounding with intent to commit a felony. It is remarkable with what diversity of opinion the various acts of crime are viewed by the judiciary, as exemplified by the sentences passed upon offenders. As an illustration of this, let me give one instance of four prisoners received the same day from different places: J. M., for horse-stealing, sentenced to six months; J. M., for vagrancy, five months; W. W., for embezzlement, three months; G. G., for larceny of valuable property, second commital, two months. This represents what is constantly taking place. Here we see that for the lesser offence of vagrancy—for the prisoner is not charged with any other—he gets one month less than the man who steals a valuable horse, and three months more than the common thief. Is it to be wondered at, that with the dislike for "honest toil," so largely prevailing among the young of this country, so many should be found hanging round the police courts, and so often within the dock, when the thief and robber, for causing, perhaps, great anxiety, and loss, and intense bodily suffering, gets off with a sentence of from one to three months, and at its expiration is again let loose to repeat some dastardly act. What hope can there be of reforming such characters, when the law has no terrors for them.

A reference to the Return under the Industrial Department will show that 68,468 days' work was performed, as against 75,818 in 1882. The eight months, from 1st February to 30th September, the number of prisoners averaged daily forty-eight less than in 1882. This difference about equalled the gang I had employed in the brickyard the previous year, when nearly $18,000 worth of bricks was made, and the returns in consequence fall very much short of last year. But that the best has been made of the material I had, is seen by the diminished number of days under the head of domestics, that being 20,556 as against 22,196 in 1882, and 26,333 in 1881; while in the broom-shop, 27,780 days' labour produced 44,016 dozen brooms, or an average earning per day for each prisoner of 31½c., against 26,635 days' labour with 39,063 dozen, or 29c. per day in 1882, and 19,569 days' labour, with 16,592 dozen, or 17c. per day in 1879. The north shop, manufacturing wooden goods, employed 22,346 days of labour, and the other industries, 18,342.

A few improvements have been made upon the prison premises that were very much needed. Among these is the removal of the old brick towers for the wall guards. They were so constructed that the guards when on duty could see nothing from the inside; consequently, they had at all times, and in all weather, to remain outside, and sometimes during extreme cold and stormy days, they were nearly chilled through by the close of the day. But with the new boxes they have a full view from the inside of all the surroundings, and can perform the duty of watchmen without being

exposed to inclement weather. The other structural additions and alterations for which an appropriation was granted last Session, have all been completed.

The conduct of the prisoners on the whole has been very good. There will always be a few cranks and bad characters, who never were kept under restraint till put in prison, and these often set themselves in defiance of all order and discipline, but they learn after a time that it is better to conform to the rules and regulations, which are not oppressive, and excellent discipline has been maintained in the prison during the past year, with a greatly reduced number of deprivations and dark cell punishments, as compared with previous years, and without tobacco—that being prohibited since the month of May, and it will not again be introduced with my consent.

I desire to acknowledge the valuable assistance rendered to myself personally by the clergy of the city, and the gentlemen who, at the sacrifice of personal comfort, come with so much punctuality in all weather to teach the prisoners in the Sabbath-school. If zeal in their work and earnest solicitude for the wellfare of those sent here, and after their discharge, can accomplish anything in their reclamation and future good conduct, the work performed by those teachers and the Prisoners' Aid Association, should not be fruitless, and it is pleasing to know that their labour is "not in vain," and that good results follow in many cases. Not a few who have served a term in the Central Prison gratefully acknowledge that it was while there they received the first good impressions, and their lives since attest the truth of this, and though Mr. Cassels and his staff of teachers often meet with disappointment, yet their influence has its effect for good in many ways, and their weekly visits are highly appreciated by the prisoners.

I estimate the amount of appropriation on capital account for the current year subject to your approval, as follows :

1st. Structural alterations and additions :—

New wall towers	$342	
Carpenter's shop, and root-house under it	568	
Paving pig-pens with brick	170	
Greenhouses	75	
Plumbing in Warden's quarters and Guard-room	600	
Addition to stable, and casing icehouse	860	
Brick-casing paint shop	780	
New kitchen for prison	....	
		$3395 00

2nd. Furniture and furnishing :—

600 feet fire hose and coupling	$700	
350 chairs for cells	100	
Paint for cell blocks, etc	400	
		1100 00

3rd. Farm and grounds :—

Team of horses and outfit	600 00
	$5095 00

I have the honour to be, Sir,

Your obedient servant,

JAMES MASSIE, *Warden.*

ANNUAL STATISTICAL TABLES.

Remaining in custody September 30th, 1882	324	
Committed during the year	669	
Recaptured	1	
Retransferred from Lunatic Asylum	1	
Total		995
Discharged on expiration of sentence	650	
" " payment of fine	46	
" by remission of sentence	8	
Retransferred to County Gaols	1	
Died in prison hospital	2	
Transferred to Lunatic Asylum	7	
Escaped	6	
Convictions quashed	2	
Total	722	
Remaining in custody September 30th, 1883	273	
Total		995

SENTENCED DIRECT TO CENTRAL PRISON OR TO COMMON GAOL.

To Central Prison	286	
To Common Gaol, afterwards transferred	383	
Total		669

SOCIAL CONDITION.

Married	192	
Single	422	
Widowers	55	
Total		669

EDUCATION.

Read and write	510	
Read only	62	
No education	97	
Total		669

AGES.

Under 18	36	
From 18 to 20	53	
" 20 to 30	257	
" 30 to 40	137	
" 40 to 50	109	
" 50 to 60	56	
" 60 to 70	19	
Over 70	2	
Total		669

NATIONALITIES.

English	110	
Irish	108	
Scotch	33	
Canadian	333	
United States	64	
Other countries	21	
Total		669

RELIGIOUS DENOMINATIONS.

Episcopalians	201	
Roman Catholics	249	
Presbyterians	86	
Baptists	19	
Lutherans	7	
Congregationalists	1	
Methodists	87	
Jews	3	
No religion	16	
Total		669

HABITS.

Temperate	86	
Intemperate	583	
Total		669

SENTENCES.

One month and under	140	
Over 1 and up to 2 months	105	
" 2 " 3 "	95	
4 months	43	
5 "	9	
6 "	151	
7 "	5	
8 "	5	
9 "	9	
10 "	1	
11 "	2	
12 "	67	
14 "	2	
15 "	3	
16 "	2	
18 "	13	
20 "	2	
23 "	5	
2 years	10	
Total		669

CRIMES.

Assault	37	
" indecent	5	
" aggravated	4	
" felonious	4	
" malicious	1	
" doing actual bodily harm	2	
Carried forward	53	

Brought forward	53
Assault and felony	1
" " neglecting to support family	1
" with intent, and gaol breaking	1
" indecent, and house-breaking with intent to ravish	1
" and drunk and disorderly	1
" " unlawful injury	1
" felonious, and robbery	1
" aggravated, and larceny	1
Assaulting Police	7
" Court	2
Abusive language	1
Attempted rape	3
" felony	1
" robbery	1
" escape from gaol	1
" larceny	3
Altering a Dominion Note	1
Arson	1
Bigamy	1
Bringing stolen property into country	3
Burglary	3
" and larceny	1
Carrying unlawful weapons	2
Cruelty to animals	5
Drunk	132
" and disorderly	14
" " assault	3
" " disorderly vagrant	2
" " breaking windows	1
Deserting from Mounted Police	1
Disorderly conduct	14
Embezzlement	3
Escaping from Reformatory	1
Exposure of person	2
Escaping from custody	1
Fighting on the street	1
Felonious wounding	2
Forgery	5
Frequenting a disorderly house	1
Felony	2
Fraud	1
False pretences	7
Giving liquor to Indians	5
Housebreaking	1
Horse-stealing	9
Keeping a disorderly house	5
" house of ill fame	3
Larceny	234
" and receiving	3
Misdemeanor	2
Malicious injury to property	5
Neglecting and refusing to support family	2
Receiving stolen goods	4
Robbery	5
" highway	2
Carried forward	570

Brought forward		570
Shooting with intent		1
Stealing from the person		1
Trespass		13
" and abusive language		1
Unlawful wounding		2
Vagrancy		79
Wounding with intent to maim		2
Total		669

OCCUPATIONS.

Barbers	6	Music teacher	1
Bakers	6	Organ tuner	1
Blacksmiths	13	Painters	19
Blacksmiths' helpers	6	Pedlars	5
Butchers	7	Printers	7
Broommakers	8	Polisher	1
Brassfinishers	2	Photographers	2
Bootblacks	3	Plumbers	2
Brakesmen	2	Plasterers	2
Bricklayers	3	Piano-agent	1
Basket-maker	1	Paper-stainer	1
Bartenders	2	Porters	2
Boiler-makers	2	Puddler	1
Bookbinder	1	Potter	1
Carpenters	35	Railway-conductor	1
Clerks	26	Shoemakers	23
Cooks	8	Sailors	13
Cab and omnibus drivers	4	Stove-mounters	3
Cabinet-makers	2	Stove-moulder	1
Coopers	6	Stereotyper	1
Cigar-makers	6	Salesmen	2
Comedian	1	Storekeepers	2
Chimney-sweep	1	School-teacher	1
Confectioner	1	Steamfitter	1
Captain of steamboat	1	Stonecutter	1
Carver	1	Sailmaker	1
Carters	2	Saddlers	1
Engine-drivers	2	Station-master	1
Firemen	10	Shipbuilder	1
Filemaker	1	Silkweaver	1
Filecutter	1	Tailors	23
Fisherman	1	Tinstamper	1
Farmers	2	Tinsmiths	12
Gardeners	9	Travellers	5
Gilder	1	Traveller, Commercial	1
Groom	1	Teamsters	6
Hostlers	2	Tinkers	3
Harness-maker	1	Upholsterers	2
Jeweller	1	Varnishers	3
Labourers	296	Waiters	3
Locksmiths	2	Woolcarder	1
Mason	1	Woodturners	4
Moulders	9	Welldigger	1
Machinists	6	Weaver	1
Miner	1	Total	669

COUNTIES.	Sentenced to Central Prison direct.	Transferred from Common Gaols.	Total.
Algoma	1	.....	1
Brant	6	.....	6
Bruce	1	1	2
Carleton	13	3	16
Elgin	8	4	12
Essex	17	1	18
Frontenac	20	.....	20
Gray	5	3	8
Halton	1	.....	1
Hastings	11	1	12
Huron	2	.....	2
Kent	12	5	17
Lambton	3	.....	3
Lanark	5	3	8
Leeds	2	.....	2
Lennox	3	.....	3
Lincoln	9	1	10
Middlesex	15	36	51
Muskoka	1	.....	1
Norfolk	7	5	12
Northumberland and Durham	1	17	18
Ontario	7	3	10
Oxford	7	3	10
Peel	.....	2	2
Perth	1	.....	1
Peterborough	1	4	5
Prince Edward	2	.....	2
Renfrew	1	.....	1
Simcoe	11	2	13
Stormont	2	.....	2
Victoria	.....	1	1
Waterloo	10	11	21
Wellington	9	3	12
Wentworth	41	51	92
Welland	9	3	12
York	42	220	262
Totals	286	383	669

INDUSTRIAL DEPARTMENT.

Return of the number of days' worked in the year ending September 30th, 1883 :—

Broom shop	27,780	
Tailor "	3,234	
Shoe "	2,812	
North "	22,346	
Brickyard	5,659	
Carpenters shop	1,043	
Tinsmiths shop	276	
Blacksmiths and Helpers	600	
Permanent improvements and outside gang	4,718	
Total		68,468

DOMESTIC DEPARTMENT.

Return shewing the number of days occupied by prisoners in domestic employment, at drill, etc., monthly, from October 1st, 1882, to September 30th, 1883.

October,	1882	1,851
November,	"	1,880
December,	"	1,880
January,	1883	2,111
February,	"	1,766
March,	"	1,892
April	"	1,631
May,	"	1,544
June,	"	1,497
July,	"	1,586
August,	"	1,526
September,	"	1,392
	Total	20,556

Table shewing the number of prisoners per day in the Central Prison during the year ending 30th September, 1883.

Day of Month.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.
1	323	317	322	324	328	314	301	303	269	266	258	277
2	323	316	322	319	329	314	300	302	270	261	262	277
3	320	317	322	321	330	313	300	302	270	258	262	274
4	317	315	319	319	330	313	304	298	267	261	263	278
5	316	315	318	316	328	310	305	294	265	266	263	277
6	321	316	323	321	327	304	302	294	263	267	260	274
7	323	315	330	321	326	302	298	297	261	262	267	276
8	322	312	326	321	328	301	298	291	261	262	265	272
9	319	311	324	326	331	303	296	296	263	260	264	272
10	315	317	324	329	328	301	304	292	263	257	259	272
11	315	312	323	326	328	301	308	292	268	255	259	272
12	315	312	329	330	327	299	306	286	267	254	255	275
13	311	312	330	331	327	304	308	286	280	254	261	275
14	312	312	329	331	333	304	303	283	274	252	261	276
15	312	319	333	326	330	311	303	282	274	252	265	274
16	311	317	333	325	329	317	300	281	273	248	265	272
17	317	319	339	324	327	314	299	285	273	248	260	272
18	316	319	339	323	327	314	309	284	277	243	260	272
19	314	319	335	336	324	312	306	278	274	244	259	270
20	322	322	343	333	322	311	306	278	273	250	259	275
21	320	325	343	333	324	308	306	275	273	246	256	273
22	324	325	340	338	321	311	306	280	269	246	255	271
23	325	322	340	336	320	310	305	283	269	245	253	268
24	322	312	337	338	320	309	311	281	269	242	255	268
25	320	320	337	336	320	309	308	278	266	247	255	268
26	319	320	333	334	317	310	306	273	261	246	271	266
27	313	319	331	331	314	305	306	273	256	251	266	264
28	312	322	326	331	311	303	304	270	269	253	266	264
29	312	321	325	330	.....	304	304	271	268	253	276	262
30	314	321	325	325	.....	303	301	271	266	252	262	274
31	313	.....	330	329	.....	301	.....	271	.....	260	280	274
Total	9838	9521	10230	10163	9106	9535	9113	8830	8251	7861	8112	8162

Highest number any one month, December		10230
" " day, December 20th and 21st		343
Lowest number any one month, July		7861
" " day, July 24th		242
Average per month		9060$\frac{4}{6}$
" day		297$\frac{17}{365}$

Report of the Surgeon of the Central Prison of Ontario.

To Robert Christie, Esq.,

Inspector of Prisons, etc., for Province of Ontario.

Sir,—The Report of the Medical Officer of the Central Prison for the year ending 30th September, 1883, respectfully represents that the general health of the prisoners has been good. In the spring and early part of the summer, owing to the coolness and the unusual quantity of rain, many complained of affections of a rheumatic character. During the summer there was an outbreak, arising from disorders of the gastro-intestinal canal which ceased upon the removal of the local cause.

For the toothless and weakly, even when not sick, I find it necessary to order milk, either alone or with porridge.

The hospital is inconveniently located, being too far removed from the main building. It is, however, cheerful and healthy.

The dark cells require ventilation, and there should be in each a wooden pillow and bench, in order to lessen the danger of draught and chill to which the prisoner is at present exposed when lying upon the floor.

The prisoners in this institution very rarely sham sickness in order to lounge in his cell, not half a dozen such cases occurring in a year. This arises from the fact that he is intensely averse to being *alone* ; he prefers to be where he can see what is going on, where he may have a chance to escape ; even to work rather than be shut up alone in his cell. In undergoing "dark cell" punishment, the prisoner is pinched on five tender points—he is alone, in the dark, on very limited diet, without bed, and deprived of all chance of securing any tobacco.

Another feature of his conduct is that, unless decidedly ill, he does not report himself as suffering upon Sundays and holidays. On thirty-one Sundays during the past year there were no cases reported. Whereas on the day preceding and the day following each such Sunday, there were quite a number. I understand that in Kingston Penitentiary the same custom prevails. Doubtless the "pain in the side," the cough, and the rheumatic twinges are less when the convict is in bed than when at work.

During the year there were two deaths, one from old valvular disease of the heart, causing dropsy ; the other from typhoid fever.

During the same period there were seven prisoners transferred to the Asylum for the Insane.

Among the prisoners, aside from those of feeble intellect, there are, mentally considered, three classes, viz. : the sane, the insane, and a middle class, which appears to be neither altogether sane nor yet sufficiently pronounced to be regarded as insane. The recognition of the existence of this last class is important, otherwise injustice may at times be unintentionally inflicted upon members of it. A member of this class has little self-government ; may be good-natured although subject to violent outbursts of temper at times, does acts which he knows will assuredly result in his punishment ; is punished, and then repeats his misconduct, only to have it followed by a repetition of the punishment. And still he jogs on, from time to time, however, doing what will be of no possible benefit, but the certain cause of misery to himself, when he could just as easily conduct himself properly. Yet in conversation with him—no matter how extended and frequent—and in ordinary demeanor he cannot be classed as insane. His mind is not in all respects up to the normal standard, and his management in prison should, in my judgment, be that for his class, and not for the insane or feeble-minded. It would be just as reasonable to put a carthorse into training, and expect of it the performances of a trotter, as to expect to be able to extract from this mentally subnormal or pre-insane convict the execution of the same amount or the same kind of labour as could be easily secured from the sane. The class forms but a small proportion of the whole number of prisoners, but it is always present. In the end many of them will become insane.

The most prolific source of insanity among the prisoners is self-pollution—a vice which, if continued, will sooner or later, even in the strongest constitution, dethrone reason. The Prison, therefore, cannot be held responsible for insanity unless it could be made to appear that it gives rise to the cause of that malady.

The following list indicates the applications made by prisoners at work for treatment and the diseases they complained of:—

DISEASE.	No.	DISEASE.	No.
Abrasions	3	*Brought forward*	2927
Abscess	3	Flatulence	2
Ague	11	Goitre	13
Aguish	43	Gonorrhœa	25
Asthma	14	Gout	8
Balanitis	2	Gravel	1
Barber's itch	17	Hæmoptysis	10
Blisters on feet	3	Headache	78
Boils	20	Heart disease	11
Bronchitis	18	Hernia	9
Bubo (Syphilitic)	7	Indigestion	71
Burns and scalds	3	Inflammation of knee	1
Cancer	7	" fingers	5
Catarrh (Nasal)	12	" hand	2
Conjunctivitis	63	" wrist	5
Constipation	1191	" arm	2
Contusions and wounds	54	" lymphatic glands	10
Corneitis	2	Influenza	2
Coughs and colds	1054	Insanity	7
Cramps	71	Irritability of bladder	1
Debility	75	Lumbago	70
Diarrhœa	130	Nervousness	14
Diphtheria	1	Neuralgia	94
Dizziness	5	Orchitis	3
Dysentery	13	Otorrhœa	29
Dyspepsia	4	Pains—sundry—alleged	136
Dysuria	25	Paralysis	1
Epilepsy	17	Pediculi	13
Eruptions	47	Phthisis	1
Erysipelas	1	Piles	20
Feverishness	10	Pleurisy	3
Fistula	1	Pneumonia	2
Carried forward	2927	*Carried forward*	3576

List of applications, etc.—*Continued.*

DISEASE.	No.	DISEASE.	No.
Brought forward	3576	*Brought forward*	3819
Rheumatism, mild	128	Stricture—urethral	11
" severe	2	Syphilis, primary	8
Ringworm	8	" secondary	38
Scabies	5	Toothache	69
Sciatica	3	Typhoid fever	1
Scrofula	7	Ulcers	46
Sleeplessness	11	Varicocele	1
Sore throat—simple and syphilitic	62	Varicose veins	5
Spermatorrhœa	9	Vomiting	12
Sprains	8	Whitlow	5
Carried forward	3819	Total	4015

List shewing number of prisoners admitted into the hospital, and diseases for which they were treated.

DISEASE.	No.	DISEASE.	No.
Abscess	2	*Brought forward*	72
Anguish	1	Cramps	4
Asthma	2	Debility	3
Barber's Itch	1	Diarrhœa	32
Boils	4	Dysuria	1
Bronchitis	2	Epilepsy	1
Bubo	1	Eruption	1
Cancer	2	Erysipelas	1
Colds	40	Feverish	7
Contusions and wounds	9	Gout	6
Conjunctivitis	4	Headache	2
Corneitis	4	Heart disease	2
Carried forward	72	*Carried forward*	132

List shewing number of prisoners admitted into the hospital.—*Concluded.*

DISEASE.	No.	DISEASE.	No.
Brought forward	132	*Brought forward*	164
Indigestion	1	Pleurisy	2
Inflammation of foot	1	Rheumatism	21
" lungs	2	Scald	1
Influenza	3	Sciatica	2
Insanity	5	Sore throat	11
Lumbago	8	Stricture	1
Nervousness	3	Syphilis—secondary	1
Neuralgia	6	Typhoid fever	2
Otorrhœa	2	Ulcer	1
Piles	1	Vomiting	6
Carried forward	164	Total	212

The operations made were:—

Amputation of fingers in	2 cases.
Excision of cancer in	2 "

The deaths were:—

From cardiac disease	1	
" typhoid fever	1	
Total		2

The average number of patients in hospital per day, from the 1st October, 1882, to the 30th September, 1883, was:—

During October	3·40
" November	3·10
" December	3·93
" January	5·22
" February	5·21
" March	8·19
" April	6·03
" May	5·54
" June	3·93
" July	6·00
" August	5·45
" September	·61
Average daily number of patients in hospital for the year	4·79
Number of patients in hospital on the 30th September, 1883	none.

I have the honour to be, Sir,

Your obedient servant,

W. T. Aikins, M.D.,
Surgeon to the Central Prison.

Report of the Superintendent of the Sunday School.

R. Christie, Esq.,

Inspector of Prisons and Public Charities, Ontario:

Sir,—In compliance with your request for a report upon the working of the Central Prison Sunday-school during the year ending on the 30th September last, I beg to say that the school has been carried on as in former years, and there is nothing of special importance to be noted in connection with it.

The teachers continue to exhibit the same interest in the men that has hitherto characterized them, and in spite of discouragements met with from time to time from some of the men, we have the utmost faith in the good that is being accomplished by our work.

The number of men attending the school, owing to the whole number in confinement during the year being considerably smaller than last year, has averaged only 185 per Sunday. We are very pleased at the change which has been brought about in the management of the Prison, by which the men are deprived (for the most part) of tobacco.

As always heretofore, the Warden, Deputy Warden and guards have been most obliging and courteous.

We also have to thank you for the new musical instrument which has been furnished, and which has proved of great assistance to us in the conduct of our services.

I have the honour to remain,

Your obedient servant,

Hamilton Cassels,

Supt. C. P. S. S.

Report of the Schoolmaster.

To the President and Officers

Of the Prisoners' Aid Association, Toronto, Ont:

Gentlemen,—In compliance with your request, I beg to submit the following as my first semi-annual report of the school established under your auspices in the Central Prison, in this city.

On receipt of my appointment as schoolmaster, in the latter part of March, I at once placed myself in communication with Mr. Massie, the Warden, and arranged with him that the hours of attendance should be from seven to nine o'clock, on Monday and Thursday evenings. I accordingly attended and opened the school at seven o'clock on Monday, the 9th of April last, and have since then held regular school, excepting during the two weeks you granted me as a vacation. In passing, I may perhaps mention the attending of the school has been made a privilege, forfeitable by any misconduct, in or out of school, and I am pleased to say, that so far I have not had occasion to complain of any man's behaviour in the class. On the opening night 57 men, ranging between the ages of 16 and 53, came up to class; and this number was afterward increased to 69 in the month of May. Upon examination I found that about 15 of these were fairly educated, 20 fit to be placed in the Second Book, and the remainder unable to read, write, or cipher at all. Inasmuch, as I could scarcely hope to benefit the more advanced, the objects of the school were explained to the assembled classes, and these, together with those who did not purpose trying their best to obtain some benefit from attending, requested not to come up, thus reducing my classes to a manageable compass; the average attendance ranging between 30 and 40 men. It is known that

the number of prisoners the past summer has been smaller than usual, and although there are only twenty-five names upon the September roll, it is doubtless to be expected that after the fall assizes, and with the long winter evenings coming on, the school will soon receive large accessions. I have hitherto confined my instructions to the three elementary subjects of reading, writing and arithmetic, with an occasional reading from English or Canadian history, and I am pleased to state that, with few exceptions, the men have shown every desire to get on; and I am informed by the guard, which is also confirmed by my own observation, that many of them readily avail themselves of every spare moment they have, preparing their lessons and set exercises; whilst those who have left the school at the expiration of their sentences, on returning their books, have invariably expressed their thanks to me for the instruction given. In conclusion, I beg to state, that I consider the school a fair success, and under all the circumstances, have every reason to be satisfied with the general progress made.

All of which is respectfully submitted,

By your obedient servant,

J. J. Pritchard.

Toronto, October 1st, 1883.

Statement of the Prisoners' Aid Association.

Toronto, 10th October, 1883.

R. Christie, Esq.,

Inspector of Prisons and Public Charities.

Sir,—In accordance with the understanding under which the grant of $1,000 was given last year towards assisting discharged prisoners in various practical ways to enable them to earn an honest living and lead an honest life on leaving the prisons, the officers of the Society beg leave to report as follows:—

1st. We have expended the sum of $3,288.97, of which the sum of $1,111.51 is chargeable against the Government grant of $1,000, being spent for the purpose for which the grant was made, as per statement marked A.

The number of discharged prisoners assisted, or for whom employment has been found during the year, is 673.

To illustrate the character of the work, a statement is appended, marked "B.," shewing in detail one month's expenditure on prisoners, and also statement marked "C." being an extract from the diary of our agent for one day.

The report of the schoolmaster to the Central Prison, employed by the Association, shows that good results have followed his exertions.

We do not limit our assistance to the city, but aid in every way we can those who are sent in from other places.

The Society have at present in their employ four paid agents, who are continually working in and out of the prisons, and among the families of those confined, and we have no hesitation in stating, with the most happy results.

We are about commencing in our building a workshop where men can be employed until other work is found for them. This will supply what we have needed in many cases, viz., "a labour test."

We can say with truth that we seldom fail in getting employment for discharged prisoners of both sexes. It is remarkable how willing the great majority of employers of labour are to give them an opportunity to retrieve their character and position.

The above statements refer entirely to the practical side of our work.

The work done through our Sunday-schools is of the greatest value. It is through this work that we obtain that influence over the prisoners, which enables us to accomplish so much with them after their discharge.

We have upwards of a hundred voluntary helpers connected with this branch of our work, and we are grateful to Almighty God for the results of these unselfish endeavours, and for all the success with which we have met in our efforts on behalf of discharged prisoners.

All of which is respectfully submitted.

For the Prisoners' Aid Association,

S. H. Blake, *President.*
S. R. Roberts, *Secretary.*

"A."

Disbursements for Twelve Months ending September 30th, 1883.

Aid to prisoners for one month (detailed statement herewith) December, 1882	$78 70	
Aid to prisoners for eleven months	585 98	
Clothes, etc., to exprisoners from Mercer Reformatory	69 48	
		$734 16
Central Prison Schoolmaster's salary		100 00
Central Prison Schoolbooks		10 41
Repairs to house on Bay Street to fit it for lodging exprisoners		267 00
Amount chargeable against Government grant of $1,000		1,111 57
Other disbursements, and amount spent for cabs		2,177 34
Total		$3,288 91

Employment found for and assistance given to 673 exprisoners.

"B."

Aid to Exprisoners for One Month, ending December 31st, 1882.

To Albert Ryerson, meals, lodging and overcoat	$1 65
Robert Gillespie, meals, lodging and overcoat	1 90
Joseph Foster, meals and lodging	40
James Leslie, meals and lodging	30
Robert Neal, meals, lodging and pair pants	1 50
George Dunning, meals, lodging, shirt and coat	2 10
J. P. Reynolds, meals, lodging and pair shoes	1 50
James Flynn, meals, lodging, pair pants and shirt	2 00
Benjamin Gamble, meals, lodging, pair shoes and shirt	2 65
James Dixon, meals, lodging, coat and shirt	1 90
J. P. Reynolds and James Flynn, meals and lodging	60
John Smith, coat	75
Wm. Anderson, meals, lodging and coat	1 15
Hugh Henry, meals, lodging and fare, Simcoe to Delhi	2 25
Benjamin Gamble, meals and lodging	30
George Wilson, meals, lodging and coat	1 50
Carried forward	$22 45

Brought forward	$22 45
James Simpson, overcoat	2 00
J. P. Reynolds, shirt	50
John Buchan, shirt	50
Robert Gillispie, shirt, socks, drawers and fare to Bronte	2 05
Robert Bates, meals, lodging, coat and shirt	1 90
Thomas McCutcheon, pair pants and shirt	1 50
Robert McNair, meals, lodging, coat and shirt	2 25
James Leslie, meals and lodging	1 10
Arthur Merrigold, meals and lodging	50
Charles Burney, meals, lodging and overcoat	3 00
Thomas Murphy, meals, lodging and shirt	80
Peter Silvas, meals and lodging	30
George Dunn, meals, lodging and coat	1 50
James Flynn, meals and lodging	70
Patrick Reynolds, meals, lodging and overcoat	3 50
Benjamin Gamble, meals and lodging	30
Michael Carroll, pair socks	15
Louisa Barker, meals	35
Fred. Gibbins, meals and lodging	30
Charles Munroe, shirt	50
James Flynn, pair shoes	75
John Boyce, meals, lodging, coat and shoes	2 50
Jesse Pocklington, meals and lodging	70
A. Merrigold, overcoat	2 00
Thomas McGuire, shirt	50
Charles Higgins, shirt, collar and overcoat	2 00
George Clark, pair shoes and shirt	1 25
Peter Fisher, meals, lodging and pair pants	1 15
James Ross, meals and lodging	30
Charles Southey, meals, lodging and shirt	90
John Brown, meals, lodging, shirt and socks	1 20
Thomas Baker, meals, lodging, shoes, shirt and coat	3 25
William Wilson, shoes, shirt and pants	2 00
Thomas Bailey, coat and pair shoes	1 50
John Prince, pair shoes	50
James Stanley, meals, lodging and shirt	90
Thomas Jones, meals and lodging	30
Thomas Jones, pants, shirt, shoes and socks	2 25
Charles Martin, meals and lodging	30
Wm. McAllister, pair pants	75
George Dunn, pair shoes and coat	1 75
John McLennon, pair shoes	1 00
Bernard McAuley, shirt	50
Wm. Livington, pair shoes	75
Robert Harlington, pair shoes	75
Perry Pearce, meals, lodging and pair shoes	1 05
John Wilson, meals, lodging and pair shoes	1 25
Wm. Livington and Thomas Harlington, meals and lodging	50
	$78 7

LOAN ACCOUNT FOR ONE MONTH.

One month's loans to discharged prisoners	$164 00
Returned within month	132 00

"C."

AGENT'S DIARY FOR ONE DAY, SHEWING CHARACTER OF WORK DONE.

MONDAY, *July 9th, 1883.*

Mr. R——, — Queen St. W., called and desired me to endeavour to obtain employment in a dry goods store for F. R., who will be discharged from the Central Prison to-morrow, Mr. R—— being willing to give security to the amount of $200.00 if necessary. *(A situation was found for him and he is doing well.)*

Ann S——, discharged this morning from the gaol, wanted work. Got her employment at Dr. Bernardo's Boys' Home, at $1.00 per day. Sent Mrs. P—— to work at the same place.

P—— F——, discharged this morning from Central Prison, shewed me the letters he had received from Berlin, offering him immediate and permanent employment in the cabinet factory, but he had no means of getting there. Consulted Mr. Howland, who consented to the amount of his fare being advanced, which he promises to repay by the 1st of August. Saw him off on the afternoon train.

Called on the Mayor and obtained a pass to Whitby for Ann B——, who will be discharged from the gaol to-morrow, and wishes to go and live with her son.

Mrs. Taylor took Mrs. B——'s little son and got him admitted into the Boys' Home, afterwards went to the Haven and arranged for Mrs. B—— to go there for a few weeks, that she may be convenient to the hospital for her confinement.

James W——, discharged this morning from Central Prison, was badly in need of a coat, shirt, and shoes. I took him to Mr. M——, York St., who promised to keep him until Wednesday, and then forward him, with others, to Algoma.

Mrs. F——, came from the Haven and explained to me the nature of her troubles. I wrote to her brother, Mr. H—— S——, Calloden, asking him to assist her.

Went with Mrs. Taylor to see Mrs. B——, Centre St., who has been very ill. Found her much better, and was pleased to hear her husband (lately from Central Prison) is still working steadily, and doing well.

THE ONTARIO REFORMATORY FOR BOYS, PENETANGUISHENE.

There are many reasons why a special interest should be taken in this institution. One of the more prominent is, that if the system and management adopted is such as will tend to develope character and principle in the lads, then a large measure of good may reasonably be expected to result from training in the Reformatory.

This will appear if the age of the boys and the length of the term for which they are sentenced are kept in view. For it is evident that lads, sent there between the ages of 8 and 16, with sentences extending from 2 to 5 years, are at that period of life when habits and character formed are more likely to prevail, and become confirmed in after life.

The number, too, who are annually discharged from the institution whether to become good and useful or to swell the criminal ranks is another reason why a deep interest should be taken in the work of the Reformatory. During the past five years, 340 boys have been discharged or an average of 68 for each year. The importance then of proper system, management, and discipline in the government of the institution cannot be overestimated.

In my report for the previous year, the history of the Reformatory is referred to, and reference is also made to the more modern system which has latterly been adopted in its management, for the purpose of shewing the difference between its past condition as a place of penal servitude and its present position as a school of instruction.

That the present method is vastly superior as a means for the reformation of the boys can admit of little doubt, for under it agreeable and correct association must necessarily be maintained, which, combined with good example and instruction, sooner or later produces better results than seclusion and punishment. Under the one system evil propensities may be subdued, under the other they are more rapidly driven out and supplanted with better sympathies and higher ambitions.

If these conclusions are correct, then equally favourable conditions as a consequence follow in their wake, for the general yet distinctive character which obtains when youths are congregated for a length of time is greatly improved, and those entering from time to time, through the influences by which they are surrounded, are more rapidly drawn into line and harmony with the general character.

As step by step is taken in this progressive course, the evidences of good results are more numerous and apparent. The confidence of the boys is more assured by the knowledge that intelligent interest is taken in their well-being, and that the measures adopted are for the purpose of promoting their good.

In turn greater confidence can be placed in them and increased personal liberty is extended, which in their circumstances most certainly tends to impart and strengthen good purposes of personal restraint and feelings of self-respect.

It would be a serious mistake, however, to suppose that in each individual case these influences have been the means of ingrafting good principles, such a result would be almost too much to hope for, and certainly too much to expect for the present at least. But that they are effecting a marked improvement is beyond question, and that a greater measure of success would have followed, but for the baneful influence of the former system, which increased the prejudices of the boys against necessary authority, and their natural antagonism to all restraint.

Unbridled liberty to exist at pleasure has no doubt been the elementary cause which has led to the necessity for the commitment of the great majority of the boys to this institution, and hence the necessity of teaching due subordination through correct principles.

If then the best interests of the institution are considered either in the light of its past history, the neglected condition of the boys in regard to their early training, or if the present position and prospects are taken into account it is evident that there is a wide field for the exercise of the best judgment in working out remedial measures which will aid in accomplishing the purposes for which the Reformatory was established.

With one or two exceptions there have been no very marked features or occurrences worthy of special notice in the history of the institution during the past year. By reference to a summary of the admissions and discharges as follows:

Number in residence on 1st October, 1882		263
Admitted during the year		58
Total number of inmates during year		321
Discharged on expiration of sentence	47	
Reprieved	24	
Escaped	4	
Died	1	
	—	76
In residence 30th September, 1883		245

It will be observed that no transfers to the Central Prison have been found necessary in consequence of incorrigibility, and that four escapes have been effected during the past year. This record is nearly the opposite of that of the previous year, for while during that term three were transferred as incorrigible, none escaped.

Various reasons, however, appear to shew that these figures do not conclusively indicate either good or defective discipline or want of proper supervision in the institution. In regard to the former, it is evident that in order to determine as to the character and conduct of each boy, time must elapse, and that during that period, a year may pass over without the exhibition of such conduct as would necessitate the transfer of any boy in the institution.

Although not wholly to be depended upon, yet in some respects the record of escapes is a much safer guide in forming an opinion about the condition and satisfactory working of the institution. For undoubtedly escapes and attempts made are an evidence of restlessness and want of docility on the part of a certain number of the boys, and in certain cases they would also indicate carelessness and indifference in the discharge of duty on the part of the officers and attendants in charge.

Since the remodelling of this institution, a prominent feature in the change has been to exhibit confidence in every boy who gives evidence of good intentions and reliability, and necessarily the stringent surveillance formerly demanded has in many ways been relaxed. Not that rules of the institution for the government of attendants and the necessary discipline have been withdrawn, but that more personal liberty has geen given the lads. Those who appear to merit a greater measure of confidence are sent to attend the engine and supply pump at the bay, others to the stables and different places outside of the Reformatory enclosure where work and attention are required.

In this way much good has been done, but the difference between the supervision existing here and that necessary in gaols and prisons is manifest, and under these circumstances escapes have been made for which the attendants could not be held altogether responsible, as that responsibility must largely depend upon the vigilance displayed, and the obedience rendered in conformity with the Rules and Regulations of the institution.

As formerly indicated the general condition of the Reformatory for the period under report has been uniform, the prevailing health, order, and discipline, good, with few incidents which call for more special reference.

Matters of detail are referred to and dealt with in the various reports made by me to the Government after my visits of inspection. Copies of these reports are annexed:—

INSPECTIONS.

The first report was as under:

"An inspection of this institution was begun by me on the 28th of March and continued during the two following days. The number of boys in the institution on the first morning of my visit was 262, a large proportion of whom were attending school, and who, following the ordinary routine of proceedings, would take the duties and employments of an equal number in the afternoon, while they in their turn were in the schoolroom.

"During the autumn and winter the general health of the boys has been well maintained, and nothing has happened in the time named to prevent them from pursuing their studies regularly and closely. The teachers each report favourably in regard to the general progress made, and it is evident, from the improvement in writing alone, that the scholars are being well looked after, and carefully instructed in this and kindred branches of their education.

"Applications have lately been made for the remission of the sentences of four of the boys now in the Reformatory. A careful enquiry into the merits of each case, together with a personal interview with each of the lads, seems to shew conclusively the propriety of moving for the release of two of them at least, who by their superior conduct for months past, have fairly earned the clemency asked for.

"The severity of the winter and extraordinary snow falls (fifteen feet since December last to date, in this neighbourhood) have left their effects upon some part of the building, facing boards having been blown off, gutters crushed down, etc. The attention of the Superintendent is called to the necessity of having the repairs effected as soon as the weather will permit of their being satisfactorily done.

"The Superintendent is also authorized to make requisition for the necessary material with which to re-lay the hall floors, and repair and renew stairways, tables, etc., according to appropriations made for these purposes. It is also desirable that the necessary repairs in plastering may be made as soon as the Superintendent can arrange with good tradesmen for the work so that the painting, for which appropriation is also made, may be proceeded with at an early day.

"In consequence of these and other defects, the buildings internally do not present that tidiness and neatness which is desirable.

"The laundry work also requires special attention, and in order to accomplish improvement in this matter—the replacing and refitting of the heating pipes in the drying-room—is authorized, the cost not to exceed $100, and the work to be done by the engineer and his assistants according to the plans submitted.

"The necessity for more room and better accommodation in the tailor and shoeshops is most apparent, and in order to get what is required, that part of the building now used as a storeroom will be taken for the purpose, and so much of the adjacent buildings (old cigar shop) as is required for a storeroom fitted up therefor.

"In order to secure the early completion of the double cottages which are required and for which appropriation is made, the Superintendent is required to

instruct the master carpenter to draw plans according to the outline already made: also furnish estimate of material, and submit them for approval, together with such sufficient specifications as will enable him to ask for tenders for the erection of the building. Their construction by other parties will enable the carpenter to attend to the repairs spoken of, and to overtake the other necessary work later on in the season.

"The plan submitted by the farmer for tilling the land during the coming season is approved of and also his suggestions therewith, for the improvement of say ten acres on the south side of the bay, which, if successfully accomplished, will add materially to the value of the products and the labour of the lads for the season."

On the 13th July I made another report to the Hon. the Provincial Secretary as follows:—

"In company with the Provincial Architect I visited the Reformatory for Boys on the 5th inst., particularly with a view to selecting the most suitable site for the new barns, stables, and piggeries, for which an appropriation has been made.

"The distance between present stables, etc., and the Reformatory buildings proper has proved to be inconvenient and objectionable on several grounds which are of sufficient importance to warrant the abandonment of the present locality and the selection of a more favourable one. A position in rear and to the north of the main buildings appears to possess the greatest number of advantages and has consequently been chosen. While this location is within easy reach of the Reformatory, it does not encroach on the grounds or present buildings, and, without any extra amount of excavation, will admit of the building of a bank, or basement barn, which will leave ample room for stabling, and a root-house in the basement, which latter is much required. A sufficient supply of stone is also to be had near the ground. The yard room will be ample, the drainage good, and leading away from the other buildings.

"The repairs which were noted on the occasion of a former visit as being necessary in consequence oi the winter's storms have all been completed. The severe storm which visited this locality last week has, however, left many evidences of its severity, necessitating immediate repairs to the sewers, the roadways and ditches about the grounds. The wide and deep washouts in the roadways leading to the bay cannot receive all the repair they require during the present season. The filling up will, however, be proceeded with as far as practicable, and the proper sodding and fastening of the roadways and ditches will be done in order to secure those portions completed from damage from a like cause. During this extraordinary storm referred to large boulders, weighing many hundred pounds, were exposed and removed from the positions in which one would have supposed they were permanently embedded.

"The floor of dormitory B in the new building was covered with water caused by the grade in the adjoining yard dipping towards the buildings. To prevent a repetition of this occurrence the Provincial Architect will be requested to furnish a diagram shewing the levels, and surface drain required to improve the grading and carry the water off properly. This work, together with the repairs to roads, and washouts in the drains and ditches will fully occupy all the time of the boys who can be properly allotted to this work during the present season.

"The repairs to the plaster ceilings are approaching completion, and the work of painting will immediately follow.

"The erection of the new cottage has not made such progress as might have been expected, and no little difficulty has been experienced in getting properly

seasoned lumber for the work. The delay occasioned on this account, together with the backward and stormy weather, have interfered with the prompt prosecution of the work which would otherwise have been done. However, now that the material has been delivered it is to be hoped that favourable weather will admit of the work being rapidly completed.

"The grade already referred to in the Reformatory enclosure will necessitate the removal of a considerable quantity of earth, and although this was contemplated when the new dormitories were erected, it has not yet been completed in consequence of other pressing improvements, but of necessity this will now have to be done, and as there is much other work of a like description required from year to year, it will be a measure of economy to substitute carts and wheel barrows for the waggons now in use for such work. The Superintendent is therefore authorized to make a requisition on the Bursar for three suitable carts and twelve wheelbarrows.

"On the day of my visit there were 249 boys variously employed. The classes in the schoolroom were represented to be making satisfactory progress; and the general health of the institution has been well maintained. Owing to my time being limited on this occasion my attention was principally directed to matters specially necessitating the visit, but I may add, as worthy of note that there was a marked improvement in the band practice since the date of my last visit, and which in view of the age of the pupils (from eight to fourteen years) reflects credit alike on the instructor and the young musicians."

The following is a copy of my third report:—

"An inspection of the Reformatory was begun by me on the 20th November, and during the two days of its continuance every part of the Reformatory was visited.

"On the first morning of my visit there were 250 boys, principally distributed in the school room, others were employed in the shoe and tailor shops, and in necessary domestic and out-door work.

"The schools were visited and there is evidence of good progress being made. The teacher in the Roman Catholic school has in conseqence of ill-health been compelled to resign his position. His place however will be temporarily filled by the Chaplain who will attend to the instruction of the lads till the services of a suitable teacher can be secured.

"The general health of the institution was good, three boys only being on the sick list, and but one of those, whose ailment is chronic, is likely to be confined to the sick room beyond a day or two at farthest. Their general appearance also both as regards deportment and dress was very satisfactory.

"The work during the past season on the farm, on roads, on buildings and in grading in the Reformatory enclosure, has been quite extensive, the latter has been done to prevent the flooding of the lower dormitory in the south wing in event of the locality being visited with a storm as severe as the one which occurred during the early part of the season. A stone wall four feet at the base and an average of six feet high extending for 300 feet, thoroughly protects the bank to the south and east of the buildings, and the filling behind it, with its present grade and surface drainage, will no doubt prove sufficient to carry off all the water from that part of the enclosure.

"The formidable washouts which were made in the roadways have been well filled up and greatly improved grades have been made on the roadway leading to the wharf and stables, also, on the full length of the road from the Reformatory south to its intersection with the old or upper road to the village. The road from the Roman Catholic Chaplain's house to the southern boundary of the pro-

perty connecting with the lower road to the village is also completed and will prove to be of great service during the deep snows in winter.

"The expenditures in connection with these improvements have been limited to the laying of the stone in the wall. The road work as well as the handling of all the material has been done by the boys and has afforded them suitable employment and permanently improved the Reformatory property.

"The ordinary work of the farm has been satisfactorily done, and good returns of hay and cereals have been got. The potato crop, however, has proved a failure, owing to the wet season and early frosts.

"The building in progress during the summer is now finished and a careful examination of the work shews that it has been well done. It is substantial, commodious, and in a desirable locality, and the house with its ten rooms and two cellars may be conveniently occupied either as a single or double dwelling.

"Repairs to the plastering in the main building have been completed and include the renewal of the ceiling in the Protestant Chapel, main stairway extending to the third storey, also work in dormitory C, together with the gate room at the gate house, and other lesser repairs throughout the building.

"Progress has been made in refitting the drying room, but it is not yet completed and in view of the unsatisfactory condition of the laundry work, no time should be lost in getting it ready.

"A large amount of work and trouble has lately resulted from the bursting of the steam pipes laid under the hall in the basement of the main building. When any repairs are required to either steam or water pipes which are laid under the heavy stone flagging forming the hall floor, the pipes cannot be reached without raising a large portion of it, and as this displacement of the floor is now being made for the purpose of repairing the broken pipes a favourable opportunity exists for making the necessary improvement. The superintendent will, therefore, arrange for the construction of a brick trench of sufficient size to receive the pipes and cover it with lengths of three-inch plank which will rest upon the brick work forming the sides of the trench at even height, and to be level with the stone flagging of the floor. This plank covering may then be raised at any point without disturbing the stone work.

"The original drain, carrying away the sewage from the main building, has lately got out of order, presumably by being choked, it has burst and now the outflow is running over the surface.. As the sanitary condition of the institution might be endangered if this were allowed to continue, the attention of the Public Works Department will be called to it with a recommendation that the tile used in its construction be equal in diameter to that with which the new drain has been laid, and also that its course be changed to run north and discharge at the same place as the new one. This course would afford a much better grade and in time to come prevent further trouble with the drain.

"The laundry work of the Reformatory continues to be done in a very unsatisfactory manner. The accommodation and appliances are no doubt inferior, but by proper attention and oversight the present work could be greatly improved and the dormitory bedding kept in much better condition. The apartments which serve for laundry and kitchen are in the basement of the original building, and although utilized for three purposes, are most unfit in many ways. There is little light in either, and no way of letting in more except at a very great cost; neither is there any ventilation and no probability of securing it properly. The bath-rooms are inconvenient and in an out of the way position. Alterations, therefore, would not effect the needed improvement and the only alternative is to devote the present laundry and kitchen to other purposes and find more suitable accommodation. This could be done by removing the remaining punish-

ment cells out of the east wing and appropriate that part of it for a kitchen. If this plan were adopted both ventilation and good light would be secured, the kitchen would be convenient to the dining-room on the same ground level and only separated from it by the present partition.

"In all cases where a considerable amount of laundry work has to be done, it is much better to have a detached building for the purpose, and in event of these changes being carried out, ample room could be had in the south end of the old carpenter shop, which could be fitted up for the purpose at no great expense. In view of the present unsatisfactory arrangements the suggestions will be submitted to the Government, and if approved, an appropriation will be asked for a sum sufficient to cover the expenditure for work and material.

"Since it was judged desirable to chose another site for the proposed new barns and stables, and that they should be built on the one selected nearer the Reformatory, it has become apparant that all the farm buildings should be constructed near each other, and also, that if this were done, that the appropriation by the Legislature for the buildings would be insufficient to cover the outlay. In view of these considerations, it has been concluded that this work should not be undertaken during the present season, but that plans and specifications should be prepared and estimates submitted of the cost of such buildings as are required on the proposed site.

"Two escapes from the Reformatory have recently been effected, one on the 10th and the other on the 24th of September last. From the Superintendent's report, and after minute enquiry at this time it is shewn that the first was accomplished under circumstances as follows:

The lad had been employed in the carpenter shop, and on the afternoon named, during the absence of his guard and instructor, he left and went to a comparatively secluded point at the rear of the Boiler and Engine room, where he adroitly cut his way through the fence, which encloses the Reformatory buildings.

He had previously attempted an escape in conjunction with another inmate, and after his return continued to express his deep contrition for the act and a strong desire to remain and obtain education and a good knowledge of his trade. These earnest expressions, together with becoming action on the part of the lad for a length of time, reassured the master carpenter as to his reliability, otherwise he would have taken precaution for his safe keeping during his temporary absence on duty outside of the shop.

"The second escapes were from dormitory C, about eight o'clock in the evening of the date named. On this occasion two lads got away, one of them however, was recaptured two days afterwards. Their exit was effected by forcing outward the lower corner of the wire door in the outer room of the dormitory.

"The Chief Guard states that on his first round at eight o'clock, he noticed that the wire door had been tampered with, but that he considered the effort to obtain exit by it had proved a failure; that he called the attention of the night guard then on duty in the dormitory to the condition of the door, then leaving the dormitory he took a position which, while it screened him from observation, also gave him a view of the dormitory, and after watching for about twenty minutes, during which time he did not observe any movements which excited his suspicion, he determined to report the matter to the Deputy Superintendent, and left the building and yard for that purpose. On returning to the dormitory immediately afterwards, the night guard reported to him that two boys were missing, and as the door appeared to be more bent and pressed outwards on his return, he considered that the escapes had taken place during his absence at the Deputy Superintendent's.

"The statement of the night guard in regard to the matter is, that in his opinion the escapes took place before the Chief guard came on his first round in the lower dormitory; (after his capture the boy confirms this,) and the guard also states that the Chief guard on making his round and taking the count was no doubt deceived as to the full number being in their beds, as the elopers had ingeniously so arranged their pillows and bed clothes as most naturally to represent their recumbent forms with their heads covered. In this case the Chief guard ought properly to have called one of the relieving guards to duty, while he was absent reporting the matter, and had the escapes taken place during his absence, he would have been responsible in consequence of this neglect. Taking the statements, which are no doubt most reliable, into account it does not appear, however, that the escapes took place during the absence of the Chief guard, and again there is ample proof of his care and anxiety to prevent the occurrence.

MAINTENANCE EXPENDITURE.

The table annexed shows the cost of maintaining the Reformatory during the year; and also the average cost per inmate, under each heading of the estimates:—

Services.	Total expenditure.	Annual cost per inmate.
	$ c.	$ c.
Salaries and wages	15,480 55	60 71
Rations	7,269 49	28 50
Bedding and clothing	5,040 98	19 76
Fuel, light and cleaning	5,548 93	21 76
Furniture and furnishings	1,155 68	4 53
Farm expenditure	2,736 34	10 73
Ordinary repairs	893 58	3 50
Stationery, postage, telegrams	614 05	2 41
Hospital expenses	140 08	55
Chapel, school and library expenses	754 36	2 96
Officer's travelling expenses	104 40	41
Recovering escaped inmates	375 25	1 47
Rent of cottages for guards	461 56	1 81
Freight	332 13	1 30
Sundries	692 95	2 87
Totals	$41,600 33	$163 27

The revenue during the year amounted to $678.88, made up as under:

Farm and garden	$152 52
Tailor and shoe shops	387 75
General workshop	133 61
	$673 88

The value of the products from the farm and garden is returned to me as $2,149.36.

The reports of the Superintendent, Chaplains, Surgeon and other officers of the Reformatory are annexed:—

ANNUAL REPORT OF THE SUPERINTENDENT OF THE ONTARIO REFORMATORY FOR BOYS.

PENETANGUISHENE, Oct. 24, 1883.

ROBERT CHRISTIE, ESQ.,

Inspector of Prisons and Public Charities.

SIR,—I have the honour herewith to submit the twenty-fourth Annual Report of the Ontario Reformatory for Boys for the year ending September 30th, 1883.

Appended below will be found the statistical tables for the year just ended; an examination of these will shew a decrease of eighteen in the number of inmates at the end of the year as compared with the previous year. Yet this decrease is more apparent than real, as the average number of inmates is in excess of the preceding. The average last year was 249, this year it is 255. There are other features evidenced by these tables, which will bear comment, favourable or unfavourable, when a comparison with 1882 is instituted, and these will in their proper place receive attention in the report.

With the exception of the stone revetment wall erected in the south-eastern section of the enclosed portion of the grounds, and the grading in its connection, the works performed during the year have been varied and desultory in character, embracing road-work done for our own convenience outside the Reformatory precincts, also the laying out and further grading of roads within, all of which will require to be in a finished state before the amount of labour expended thereon can be appreciated. Further, the snowfall last winter, in this locality, was far in excess of the average; added to this we were, in the early spring, visited with unusually heavy and continuous rain storms, these, combined with the melting snow, let loose such a flood of rushing waters over the roads leading to the bay, as to cause a number of extensive washouts. To repair these damages, and to construct the roadways so that they could better resist possible further inroads from the same cause, also entailed considerable work during the past summer. To render this work more secure, a very valuable and eminently practical suggestion from yourself was adopted: that is, the sodding of the watercourses, and we have great pleasure in stating that this sodding serves the purpose admirably.

Within the main building a considerable amount of work has been done in the way of plastering, carpentering, etc., also in repairs and renewals connected with the steam heating system, and these latter matters have involved an expenditure of time, labour, and money to a greater extent than might reasonably have been expected when it is taken into account that this mode of heating was only introduced here in 1882. In this connection the total failure of the steam drying room to serve in any way the purposes for which it was fitted up, requires special mention. From the beginning, the expectations formed in respect to its usefulness, were in no degree realized, and before it was many months in operation it ceased to be of any use whatever. Under these circumstances, the labour expended, and the material supplied, were altogether lost, and after consultation with yourself, a new system had to be adopted, and entirely new material had to be provided. We are indebted to our engineer, Mr. Trott, for the plans and specifications of the improved drying-room. Their successful application is also due to his diligent and persevering exertions.

Early in the year we had the pleasure of opening our new play-hall or gymnasium. The dimensions of this hall are, length seventy-eight feet, width thirty feet, height of ceiling twenty-two feet. It is sheeted throughout, ceilings included, with matched boards, is well lighted, and is fairly furnished with the ordinary paraphernalia requisite for the reasonable exercise of gymnastic feats. In the wet and stormy weather of the spring, summer, and fall, and throughout the winter months, this hall affords comfortable shelter as well as the means of recreation, and is hailed in this respect by the boys as a great boon, and is by them immeasurably enjoyed.

In order to assist in beautifying the grounds attached to the institution, and thus render them attractive to visitors and to the passers-by as well, we succeeded, by utilizing

material which would otherwise have almost gone to waste, in obtaining last fall, at very little, if any, expense to the Treasury Department, a passably useful green-house and forcing-house combined. By the aid of this unpretentious structure, the gardener has been enabled, from the small and heterogeneous stock of foliage and flowering plants picked up here and there, to find useful, interesting, as well as instructive employment for himself and his boys during the winter and early spring months. Our success in this line has been wonderful when our rude appliances and limited stock of plants at starting are taken into account. This success can be better appreciated when it is known that we had ready, by the middle of last May, some thousands of house, and bedding-out, plants. We would desire to develope still further this branch of industry as, apart from its usefulness as a medium of education in the art of horticulture and floriculture—a refining medium without question—it will, with very little pecuniary assistance, together with some assistance of a different kind, which will be made known to you in due season, also become a source of considerable revenue.

Our gardening operations, in consequence of the wet and cold spring-time, together with early frosts later on, were not as successful as we might reasonably have hoped for, considering the pains taken in cultivation and the promising appearance at one part of the season, of the various crops. Fortunately more attention was given this year to the growing of carrots, parsnips, and mangolds, and the success attendant on the gardener's efforts in that direction have more than compensated for the loss in respect to the other kinds of vegetables, and thereby he has been enabled to more than maintain the average gardening results.

The unbenign influences that dwarfed our hopes in respect to the gardening returns also contributed towards reducing the yield of the farm, more particularly the potato crop, which has proved to be almost a total failure, owing to the frosts which visited us early in September. From the average planted we calculated on storing away this fall at least 1,600 bushels of that, to us, indispensable vegetable, but instead, we are disagreeably surprised to learn that not twenty-five per cent. of that quantity will be harvested. Our crop of oats, peas, and hay, and our pasture land benefited in a considerable measure by some of the influences which proved so unpropitious to the growth of the potato, and the increased yield from these products will serve to make the returns from the farm not wholly unfavourable when compared with those of former years.

Through increased and more intelligent attention being given to our horned cattle, a decided improvement has resulted. Consequent on this improvement, the supply of milk has been more steadily maintained, and the quantity sensibly increased. Our young cattle are also more promising, and we are not without hopes, should this improved condition of affairs in the above connection be also maintained, that we will be enabled at all seasons of the year to furnish our boys with a full allowance of that necessary portion of their dietary. Success has also attended the efforts put forth in order to secure a better and more thrifty breed of pigs, and this is proved by our being enabled to report to you that we will salt down this year a quantity of pork almost double that of any year during the last decade. Added to this, our stock for next year's purposes is in such number and condition as to justify us in speculating on a reasonable increase on the above shewing.

Many other improvements in the material order, although minor in character, would, in the aggregate, represent considerable gains, and would therefore merit more than a passing notice were we not afraid to trespass too much on your patience, which virtue, we are compelled to acknowledge, has been already severely tested.

Having discussed the subject of loss and gain in this "little world of our own" from the material point of view, we will now proceed to review our position and to calculate our loss and gain from a higher standpoint. First, we will ask ourselves what gains and losses, in the moral order, have been made during the past twelve months; what advantages have accrued through our own exertions and through the exertions of those identified with us in the task of solving the problem of *what is best* in connection with the well-being and advancement of our mutual charge. Were we to answer for ourselves only, we should say that whilst no decided step in advance has been made or any *markedly* great gain in the general features of advancement, has been attained, yet, that when we

come to individualize, a solid gain in that respect can be conscientiously claimed. And this is proved to our satisfaction in numerous ways, not easy to particularize in this Report, besides being difficult to convey to others even were oral testimony permissible. But we are by no means standing still, neither are we retrograding. The movement is still upward, and this movement, to one less anxious than we are, might, by him, be considered more than satisfactory.

If such a one were in our place and were asked to furnish proof of this condition of affairs, he could point to the increased number of remissions for meritorious conduct which have taken place during the past year, and show, even when compared with the year immediately preceding, a clear gain in that respect of sixty per cent. And, he could emphasize the fact that this increase in the number of sentences remitted has been, although with many obstacles in the way, gradually extending, year by year, since the inauguration of the new era in respect to discipline. It would also be in his power to shew that during the past four years, a period embracing the establishment of the new order of things, the aggregate remissions obtained almost equal in number those granted during the years intervening from the opening of the institution for the first time in 1858 until 1879, a period extending over twenty-one years. He might also claim, without rendering himself liable to be accused of optimism, that matters throughout exhibit marks of steady improvement; that a truer appreciation, on the part of the boys, of the advantages with which they are surrounded, has been developed, consequently, more eager desire to benefit by these advantages is now by them exhibited: that undoubted manifestations of individual honour and good faith are more frequent and more observable; that those boys in whom trust may with safety be reposed are more numerous than heretofore; moreover, that their number is continually on the increase. This is evidenced by the noteworthy progress made in the schoolroom and in the workshops; by the bearing and conduct of the boys towards each other; in the care and honesty displayed in the work at which they may be employed, and in regard to the property with which they may be entrusted. All this and more he might conscientiously claim, and were he of a self-satisfied nature, he might permit himself to enjoy, honestly and with the utmost content, the successes achieved so far. But, on one intimately connected, day after day, with reformatory work, will be forced the conclusion that at no time can he consider himself free from anxious responsibility, or from the painful feeling of hope deferred. This latter is attributable to many causes, but to attempt to particularize even a modicum of them, would involve us in such a maze of thought and of speculation that it would be beyond our ability, within reasonable space, to extricate ourselves therefrom.

Some of these causes are not beyond our hopes of immediate remedy, whilst others may, in good time, be also brought within the reach of remedial agency; for the balance we must "learn to labor and to wait," consoled with the knowledge that if we will work and wait intelligently, a fair measure of success will, in the end, crown our efforts in this direction.

An increase this year, equivalent to sixty per cent. in the number of remissions as compared with 1882 is noticed above, but when it is known that the total of the year is only twenty-four, and that this does not represent remissions in the ratio of one in ten of the average number of inmates, it may well be said, that in this showing there is not much whereof to boast. The contemplation of this fact tends to lead me to a renewal of the discussion of the pardoning system, a subject to which we referred at some length in last year's report. For obvious reasons, some of which are already known to you, we will for the present resist the temptation, and will content ourselves with hoping that ere another year shall have passed, a comprehensive and well-devised scheme, complete in every detail, will be put in operation, whereby those boys, who by good conduct and steady progress have earned a remission of their sentences, may promptly receive their reward.

I have the honour to be,
Sir,
Your obedient servant,
THOMAS McCROSSON,
Superintendent.

STATISTICAL TABLES.

Shewing the operations of the Reformatory for the year ending 30th September, 1883.

In residence, 1st October, 1882	263	
Admitted during the year	58	
Total number of inmates during the year		321
Discharged according to sentence	47	
Reprieved	24	
Escaped	4	
Died	1	
		76
Remaining in residence on September 30th, 1883		245

NATIONALITIES of boys committed during the year and of those committed since the establishment of the Reformatory.

	Commitments of the year.	Total commitments.
Canadian	34	1032
English	12	130
United States	3	117
Irish	6	47
Scotch	3	26
Other countries		17
Total	58	1369

RELIGIOUS denominations of Boys committed during the year, and of those since the establishment of the Reformatory.

	Commitments of the year.	Total commitments.
English Church	16	463
Roman Catholic	21	456
Presbyterian	4	126
Methodist	11	240
Baptist	5	65
Other Denominations	1	19
Total	58	1369

Ages when Committed.

1 at 8	5 at 12	5 at 16
3 at 9	16 at 13	1 at 17
4 at 10	11 at 14	
1 at 11	11 at 15	

Total 58

Periods of Sentence.

For 2 years and an indefinite period	1
" 1 year and an indefinite period not to exceed 5 years	1
" 1 year	1
" 1 " and 364 days	1
" 2 "	5
" 3 "	20
" 3½ "	1
" 3 " and an indefinite period not to exceed 5 years	1
" 4 "	10
" 4½ "	1
" 5 "	13
" Indefinite period not to exceed 5 years	3
Total	58

Crimes for which the 58 boys were convicted and sentenced to the Reformatory.

Larceny	42
Vagrancy	3
Assault	1
Incorrigible conduct	2
Horse stealing	1
Housebreaking	3
Arson	1
Damage to property	1
Attempt to stab	1
Manslaughter	1
Burglary	1
Obstructing the railway	1
	58

Counties of Province from which the 58 commitments were made during the year.

Brant	2	Oxford	3
Bruce	1	Renfrew	2
Frontenac	4	Simcoe	2
Huron	2	Stormont, Dundas & Glengarry	1
Kent	3	Victoria	1
Lambton	5	Wentworth	5
Leeds and Grenville	3	York	14
Lennox and Addington	1		
Middlesex	9	Total	58

NUMBER of commitments since Confederation.

COMMITMENTS.	YEAR.	No.	No. at close of same year.
Committed in	1867	55	170
"	1868	59	173
"	1869	47	170
"	1870	41	163
"	1871	48	155
"	1872	48	158
"	1873	31	130
"	1874	58	139
"	1875	71	173
"	1876	45	183
"	1877	75	195
"	1878	69	196
"	1879	57	206
"	1880	80	216
"	1881	96	250
"	1882	84	263
"	1883	58	245

STATEMENT exhibiting the labour done in the year ending 30th September, 1883.

CARPENTER'S SHOP.

	DAYS.
Work at the Superintendent's house	30
" " Deputy do do	15
" " Bursar's do	2
" " Prot. Chaplain's do	75
" " Rom. Cath. do do	9
" " Guards' do	4½
" " New houses	100
" " Reformatory	3509
	3744½ days.

Total number of days 3744½ at 40c	$1497 80
Cash sales	9 69
	$1507 49

SHOE SHOP.

Articles made and repaired :—

411	pairs of Cobourg boots at 50c	$205 50
30	" long do 75c	22 50
770	" boots repaired at 30c	231 00
840	days' work outside at 25c	210 00
	Cash sales	40 05
		$709 05

TAILOR SHOP.

Articles made and repaired :—

338	coats for inmates	@	$1 00	..	$338 00
430	pants "	@	50	..	215 00
559	caps "	@	20	..	111 80
268	shirts "	@	12½	..	33 50
442	drawers "	@	15	..	66 30
304	undershirts "	@	12½	..	38 00
236	shirts repd. "	@	05	..	11 80
535	drawers "	@	05	..	26 75
75	coats "	@	10	..	7 50
245	mattresses for dormitories	@	25	..	61 25
168	sheets " "	@	10	..	16 80
245	pillows " "	@	05	..	12 25
171	" covers " "	@	05	..	8 55
201	towels " "	@	01	..	2 01
40	prs. of slippers "	@	10	..	4 00
36	aprons for dining hall	@	10	..	3 60
542	sheets repaired	@	05	..	27 10
428	pillow covers "	@	01	..	4 28
18	suits for guards	@	5 00	..	90 00
1	overcoat " "	@	3 00	..	3 00
1	pr. pants " "	@	1 00	..	1 00
2½	over suits " "	@	1 00	..	2 50
	Outside work 280 days	@	25	..	70 00
	Cash sales				15 58
					$1170 57

RECAPITULATION.

Carpenter shop	$1507 49
Shoe "	709 05
Tailor "	1170 57
	$3387 11

PROTESTANT CHAPLAIN'S REPORT.

PENETANGUISHENE, 9th October, 1883.

R. CHRISTIE, ESQ.,

Inspector of Prisons and Public Charities :

SIR,—I have the honour to transmit the following report as Protestant Chaplain of the Ontario Reformatory for Boys for the year ending 30th September, 1883.

The number of boys registered as Protestants at the close of the year is 161, of whom 75 are members of the Church of England, 36 Methodists, 28 Presbyterians, and 22 Baptists, being in all 20 less than were under my charge when I last presented my report.

The conduct of the boys has been good, although there have been exceptions, young men whose habits were formed when they entered the Institution, persons upon whom no impression for good could apparently be effected. Such grown up inmates contaminate children, weaken the influence of the Reformatory and by their evil example prejudice the minds of the comparatively innocent and in some cases lead them astray.

The Sunday and week day religious services are conducted as last year, with the exception of the Sunday School. Rather more than two years since, the Protestant Boys, not members of the Church of England were taken in charge of the Master Tailor, a person in every way qualified for the work he undertook, and instructed in the "International Lessons" and other religious subjects. This I approved of and commended in my two last reports, for whilst it nearly equally divided the Protestant lads making two large yet not unwieldly classes, it afforded me an opportunity of teaching the distinctive principles of the Church of England to the boys professing that Creed without biassing the minds of other Protestants ; and afforded increased religious instruction to the various other denominations in the manner in which their parents, had they the choice, might perhaps approved of. For some unexplained reason, all were again handed over to me in the early part of the summer, and although as Chaplain it is my legitimate work to religiously advise all, a class of 161 Reformatory Boys is two large for one person to teach with credit to himself or justice to his pupils.

The Government has generously provided us with an excellent Chapel Organ, a material assistance in rendering the services more attractive to the boys who are in many cases fond of music, a taste which I desire to cultivate in all who in the slightest way exhibit it.

A library of good healthy reading matter has also been furnished. The books are distributed weekly but although upwards of 100 lads can read intelligently there are only an average of 60 who care for books.

Although not officially connected with the School, I visit it very frequently and am pleased with the advancement made by the boys in the several departments ; the Teachers are evidently painstaking and many of their pupils intelligent.

I would respectfully suggest an annual public examination of the two schools in the institution by the Inspector for the County ; this would create a spirit of rivalry, which would stimulate the lads to exertion and better prepare them for contact with the outside world when they would leave this.

Nearly six months have elapsed since we were put out of the chapel proper, for necessary repairs and alterations, and we are still holding all our religious services in the reading or recreation room. This is an inconvenience in many respects, and I hope efforts will immediately be made to provide a permanent place of worship for the Protestant boys. For upwards of two years we have (perhaps unavoidably) been driven from pillar to post. I endeavour to cultivate a spirit of reverence for sacred places, which begets a feeling of awe and respect for the Divine Being whom we worship. This cannot be effected properly in a place where concerts and amusements of every description are held, and I respectfully urge that the alterations to be made in the Chapel be at once completed.

The lecture or reading room cannot be used for the purpose for which it is intended and specially furnished while we occupy it as a chapel. Under present circumstances the boys are deprived of a room expressly set apart and dedicated as a place of amusement.

I desire in conclusion to thank the several officers and employees of the institution for their co-operation in all my efforts to promote the welfare of the boys.

The Lord Bishop of Toronto has, as usual, shewn his deep interest in the boys by providing books, illustrated papers and other periodicals, which are gratefully acknowledged.

I have the honour to be, Sir,

Your obedient servant,

G. A. Anderson,

Protestant Chaplain, Ontario Reformatory for Boys.

ROMAN CATHOLIC CHAPLAIN'S REPORT.

PENETANGUISHENE, 15th October, 1883.

R. CHRISTIE, ESQ.,

Inspector of Prisons and Public Charities:

I have the honour to transmit the following Report as Roman Catholic Chaplain of this institution for the year ending 30th September, 1883.

The number of boys under my care on 30th September, 1882, was 83; on the 30th September, 1883, it is 86.

During the year 23 boys were entered on the roll as Catholics. Of these 17 had not made their first communion, and but one had been confirmed. In the same interval 20 Catholic boys left the institution, of whom all had made their first communion and 16 had been confirmed.

His Grace, the Archbishop, visited the Reformatory on the 25th, 26th and 27th September last, and on that occasion confirmed eight boys.

The library, which has been in operation since May last, has wrought much good among the boys and is very well appreciated by them. We have a very good assortment of books and I can already perceive a decided improvement in the class of books the boys wish to read.

The Chapel accommodation is, as before reported, excellent.

The hours of Mass and Catechism on Sundays remain as at last report. Catechism is taught daily, in the school. Daily prayers are said at 7.30 a.m. and 5.45 p.m.

The conduct of the boys and their general behaviour during instruction are very good, quite as good as one finds among boys of their age anywhere.

I have the honour to be, Sir,

Your obedient servant,

J. F. McBRIDE,

R. C. Chaplain, Reformatory for Boys.

PROTESTANT SCHOOLMASTER'S REPORT.

PENETANGUISHENE, October 9th, 1883.

R. CHRISTIE, ESQ.,

Inspector of Prisons, &c., Toronto, Ont.

SIR,—I have the honour to transmit the Report of the Protestant School for year ending September 30th, 1883.

I am happy to be able to say that I have been obliged to formally report only one boy for the year; and I was compelled to report him for habitual inattention and indolence

The subjects taught during the past year in the Senior Division were Reading, Writing, Arithmetic, Grammar, Geography, Book-keeping, British History, Mensuration, Algebra, Dictation, and Etymology; in the Junior Division Reading, Writing, Arithmetic, and Dictation.

I have introduced quarterly written examinations into both the Senior and the Junior Divisions; and I think it would have a stimulating influence, were it possible to have nicely framed Honour Rolls (with the boys' names inscribed, according to their number of marks at each examination,) hung up in the respective school rooms.

I enclose the usual statements of attendance, progress, comparative educational status of those discharged, and of those received for the year; also, number of boys belonging to each Division of the Protestant School on September 30th, 1883:

Report of Attendance.

——	Quarter ending Dec. 31st. 1882.	Quarter ending Mar. 31st. 1883.	Quarter ending June 30th 1883.	Quarter ending Sept. 30th 1883.	Total.
Senior Teacher's Room :—					
Aggregate attendance	5,039	6,707	5,873	4,761	22,380
Number of days taught, 281.					
Average daily attendance, $79\frac{1}{2}\frac{8}{8}\frac{1}{1}$.					
Aggregate non-attendance, 4,567.					
Causes. At work	1,495	709	1,199	791	4,194
Causes. Sickness	35	25	172	73	305
Causes. Under punishment	2	12	8	46	68
Average daily non-attendance, $16\frac{7}{2}\frac{1}{8}\frac{1}{1}$.					
Assistant-Teacher's Room :					
Aggregate attendance	4,343	5,446	5,270	4,559	19,618
Number of days taught, 287.					
Average daily attendance, $68\frac{1}{2}\frac{0}{8}\frac{2}{7}$.					
Aggregate non-attendance, 1,682.					
Causes. At work	435	141	411	466	1,453
Causes. Sickness	6	28	49	85	168
Causes. Under punishment	1	4	15	41	61
Average daily non-attendance, $5\frac{2}{2}\frac{4}{8}\frac{7}{7}$.					
Total average daily attendance of Protestant school, 148 (approximate).					
Total average daily non-attendance, 22.					

Report of Progress.

——	No. in each class. Oct. 1st, 1882.	Position on September 30th, 1883.							Gone out.
		1st Class.	2nd J. Class.	2nd S. Class.	3rd J. Class.	3rd S. Class.	4th Class.	5th Class.	
5th Class	13	....	....	....	....	....	....	7	6
4th Class	21	....	....	....	....	1	6	4	10
3rd Class Senior	19	....	....	....	....	5	5	....	9
3rd Class Junior	30	....	....	....	8	12	....	....	10
2nd Class Senior	38	....	....	16	11	....	....	....	11
2nd Class Junior	39	....	17	15	2	....	....	....	5
1st Class	19	6	11	....	. .	....	....	....	2
	179	....	....	....	....	....	....	....	. .

EDUCATIONAL status of boys received, and discharged &c.. for year ending September 30th, 1883.

——	1st Class.	2nd J. Class.	2nd S. Class.	3rd J. Class.	3rd S. Class.	4th Class.	5th Class.	Total.
Received	16	8	7	6	....	....	...	37
Discharged, &c	3	4	9	9	12	10	8	55

TOTAL number of boys belonging to Protestant school, September 30th, 1883.

——	Forenoon Session.	Afternoon Session.	Total.
Senior Teacher's Room	19	57	76
Junior Teacher's Room	36	34	70
No. not attending school	6	9	15
	61	100	161

I have the honour to be, Sir,
Your obedient servant,
E. W. MURPHY.
Senior Protestant Teacher.

ROMAN CATHOLIC SCHOOLMASTER'S REPORT.

PENETANGUISHENE, 12th October, 1883.

R. CHRISTIE, ESQ.,
Inspector of Prisons and Public Charities.

SIR,—I have the honour to transmit the following report for the Roman Catholic School of the Ontario Reformatory for Boys.

On September 30th, 1882, the number of boys on the Roll was 83 ; on 30th September, 1883, it is 86. During the year 23 Catholic boys were entered on our Roll, of whom 9 knew nothing, 2 were in 1st book, 5 in 2nd, 3 in 3rd, and 4 in 4th. Twenty were released during the year, of whom 2 were in 1st book, 1 in 2nd, 7 in 3rd and 10 in 4th.

Internally the schoolroom has been re-arranged with a marked gain in seating accommodation, which, as noticed in last report, was scant. We have now accommodation for 50 boys, whilst our largest attendance at a single session during the year has been 45. Our stock of books is complete, but our maps, from antiquity and want of room, or suitable mounting, are all but useless. We require a good set of large globes or at least a good terrestrial.

Improved grading has rendered it possible to take up a somewhat larger range of subjects, and to handle them more thoroughly. In the morning session, averaging 39.13,

and ranging from III to V Readers, all take, besides Reading, Writing and Arithmetic, Grammar, Geography, Dictation and Composition of business forms and simple narrative. In the afternoon session, averaging 45.07, and ranging from A. B. C. to II Reader, besides Reading and Writing the first and second classes take Arithmetic (simple rules) and Composition (simple narrative). The character of the boys and the time at our disposal, are best suited by an arrangement such as the above.

SYNOPSIS BY CLASSES.

In V. Reader	7	
" IV. "	15	
" III. "	15	
" II. "	11	
" I. "	15	
" Primer	23	
	—	86
Writing in Copy Books	63	
" on Slates	23	
	—	86

STATEMENT OF ATTENDANCE AND NON-ATTENDANCE.

	Quarter ending 31st Dec. 1883. Days 76.	Quarter ending 31st Mar. 1883. Days 74.	Quarter ending 30th June 1883. Days 77.	Quarter ending 30th Sept. 1883. Days 58½.	Year–285½ days.
Morning Session :					
Average attendance	27.53	38.33	34.49	35.12	33.87
" non-attendance	2.63	1.18	5.36	11.88	5.26
" Roll	30.16	39.5	39.85	47.00	39.13
Afternoon Session :					
Average attendance	38.34	39.62	36.40	27.80	35.54
" non-attendance	11.28	5.27	7.58	14.00	9.53
" Roll	49.62	44.89	43.98	41.80	45.07
Whole School .					
Average attendance	65.87	77.95	70.89	62.92	69.41
" non-attendance	13.91	6.45	12.94	25.88	14.79
" Roll	79.78	84.40	83.83	88.80	84.20

The conduct of the boys was good throughout. In the morning session it has been excellent.

I have the honour to be, Sir,

Your obedient servant,

ANDREW O'MALLEY,

Roman Catholic School Master.

REPORT OF SURGEON.

Ontario Reformatory for Boys,
Penetanguishene, October, 1883.

R. Christie, Esq.,
Inspector.

Sir,—I have the honour to submit the Medical Report on the sanitary condition of the Ontario Reformatory for Boys for the year ending September 30th, 1883, and in doing so, have much pleasure in stating that the health of the boys has been as good as could have been expected.

We have had but one death during the past year—that of the boy Rooney, who died suddenly of heart disease during the night of the 29th of June—the particulars of which have already been reported.

We have not had a single case of pneumonia; contrasting very favorably with last year, during which we had twenty-four cases.

The beneficial results of the improved system of drainage are to be found in the absence of diphtheria and typhoid fever, although both these diseases have been very prevalent, not only in this county, but all over the Province.

The severity of other diseases has been about the same as during other years, consequently not requiring any special reference.

The following is a synopsis of the diseases under treatment during the year:

Abscess Simple	Iritis
" Lumbar	Mumps
Burns,	Neuralgia
Bronchitis	Ottorhœa
Carbuncle	Orchitis
Catarrh	Ophthalmia
Colic	Psoriasis
Constipation	Purpura
Conjunctivitis	Rheumatism Neur.
Convulsions,	Ringworm
Coughs and Colds	Scabies
Diarrhœa	Sprains
Dysentery	Scalds
Erysipelas	Synovitis
Epilepsy	Tonsillitis
Frostbite	Urticaria
Fracture, arm	Ulcers
" clavicle	Wounds.
Hernia	

I have the honour to be, Sir,
Your obedient servant,
P. H. Spohn,
Surgeon, Ontario Reformatory for Boys.

ANDREW MERCER ONTARIO REFORMATORY FOR FEMALES, TORONTO.

Little or no difference of opinion can exist as to the primary measures necessary in dealing with criminals, for it is evident that lawless disobedience must be met by enforced restraint; that habits of vice and debauchery must be counteracted by compulsory measures; and slothfulness and idleness overcome by active employment and labour.

Various opinions are entertained, however, as to the best system to be employed in giving effect to these disciplinary agencies. A more thorough isolation and classification of criminals is also frequently advocated.

No doubt much can be said in favour of the separation of the matured and hardened in crime from those who are only entering upon evil courses.

Where different institutions are provided in which different classes can be placed there are no great difficulties in the way, but when graded classification is attempted in any single institution where enforced employment in industrial work is carried on, it will appear that such a course will require careful consideration.

It is evident too, that classification to be of any value must be permanent and afford complete isolation, so long, at least, as it is desirable to maintain it. And it is equally important that the measures of restraint and labour should be continued in the most systematic manner.

Together with these necessities, provision should be had for the separate accommodation of an ever changing population. These changes in numbers frequently represent great diversity of character and class which may overcrowd one apartment and leave another almost vacant, and may to an equal extent, disturb the industries carried on in consequence of the unfitness and inability of new entrants to do the work.

The short term of sentence imposed on inmates of the Reformatory, together with the limited number of industries available and the absolute necessity for constant and active employment, have each to be taken into account in efforts to make a strict and graded classification of the inmates.

These matters have, however, been constantly kept in view in the management of the Reformatory, and the experience gained during the past three years shews that certain arrangements are practicable and can be carried out without interfering with the proper supervision and active prosecution of the work to be performed, and will at the same time effect such separation of the inmates as will produce good results.

Three separate wards are already appropriated exclusively for different classes, and a fourth is determined upon so soon as some slight necessary alterations are made.

The first is for entrants who are kept there for a month on probation, after which, if their conduct has been good, they are given employment and a place in the general wards, in which they have better rooms and are otherwise more comfortably situated. If, on the other hand, their behaviour has been bad and their conduct refractory, they are transferred to the refractory ward, which is set apart specially for those who cannot be kept in the general wards without injury to the discipline and general well-being of the other inmates.

This arrangement has already been productive of good results, for although

no other punishment is imposed than isolation, yet as an incentive to good behaviour in the entrants' ward, and a deterrent to insubordination in the general wards, it has beyond question rendered the task of controlling the inmates easier, and as the system is thoroughly adhered to in the future, the benefits will appear more fully.

In order that no injustice may be attributed under this arrangement, and that it may have the best moral effect, rules and regulations specifying the general conduct and obedience which will entitle the inmates to the superior position are being prepared, and they will also specify as fully as possible the offences and time for which offenders will be transferred to the refractory ward in the event of disobedience.

The remaining ward to be separately occupied is for the purpose of preventing communication between the older and more criminal, and the younger inmates of the Reformatory.

Since the opening of the institution a number have been committed and sentenced as keepers of houses of ill-fame, and for like offences, and there is ground for believing that, notwithstanding the efforts to prevent it, the influence of this class has been hurtful to the younger inmates, consequently there seems to be no alternative but to maintain a strict and exclusive separation between them.

No unusual or marked occurrence has taken place in the history of the Institution during the past year requiring more extended notice than will be found in my minutes of inspection which follow and the reports of the Superintendent and Surgeon, and annual statement of the industries, and statistical tables for the year which are appended.

Industrial Refuge for Girls.

I am glad to say that I can make a most favourable report on this branch of the Reformatory for the past year.

There has been prevailing good health and nothing to disturb the closest application to studies and instructions in household duties, and in all these acquirements there has been general and marked progress. The thorough control and good order maintained without recourse to harsh measures is an evidence of the care and judgment exercised by the teacher and assistants in the discharge of their duties.

The results of such a course are apparent in the kindly confidence and due respect shewn by the girls to their superiors, and in the general tone and improved character of this class.

The advantage gained in this respect will no doubt prove to be of great benefit in time. Under these circumstances new-comers are at once placed under better influences, and correct training is more satisfactorily and successfully accomplished.

The following summaries shew the movements of the inmates of the Reformatory and Refuge respectively :—

Reformatory.

Number of inmates on October 1st, 1882	145
" " " since admitted	117
Re-captured (escaped during previous year)	1
Total number in custody during year	263

Discharged on expiration of sentence	151
" " payment of fines	4
" " authority of Court	1
" " remission of sentence	3
Transferred to Refuge for Girls	1
" " Lunatic Asylum	1
	161
In custody on 30th September, 1883	102

REFUGE.

Number of inmates on 1st October, 1882	28
" " since admitted	12
Total number in residence	40
Discharged on expiration of term	2
" warrant of Lieutenant-Governor	1
Apprenticed by order of Inspector	1
	4
In residence on 30th September, 1883	36

The decrease in the number of commitments to the Reformatory, as compared with the previous year, has already been commented upon in my general report upon the common gaols and other custodial institutions of the Province. The reasons given for the decrease were the fewer number of females committed to gaol and convicted of offences for which sentences of imprisonment in the Reformatory would likely be imposed. The decrease is also accounted for by the fact that many old and habitual offenders from Hamilton and Ottawa had, prior to the commencement of the official year, been sentenced to the Reformatory for periods of over twelve months. The fear, too, of the Reformatory seems to have kept many of the disorderly class in check, or driven them away from the cities where police supervision is stricter, as the following table of commitments from the Counties of Carleton, Wentworth and York, during the years 1882 and 1883 would seem to shew:—

	1882	1883
Carleton	29	14
Wentworth	41	21
York	86	52
	156	87

MINUTES OF INSPECTION.

I subjoin copies of the minutes made by me of the various inspections of this Institution:—

"An inspection of the Reformatory was begun by me on the morning of the 19th February. The structural improvements in progress at the date of my last inspection under the direction of the Public Works Department have since been

completed, and the alterations and improvements made have been of great advantage, in affording increased opportunity for classification of the inmates. The fitting up of the east basement cells with iron gates, and the making of openings into the work-room and yard attached, have specially served to effect this purpose, and this ward is now being used exclusively for incorrigibles and those who have just entered upon their term of confinement in the Reformatory. Sufficient evidence of good or improved conduct is the condition upon which the inmates of this ward are transferred to the general ward, and become associated with the other inmates in their usual employments. This stimulus, together with the allotment of better or privileged rooms to those in the general ward, who, by their good behaviour, have proved themselves worthy of more confidence, is producing good results in promoting the discipline of the Institution. In this connection, it is gratifying to note that since the date of my last official inspection of this Institution, an inmate has received a remission of a portion of her sentence upon representations being made to the Executive regarding her exemplary conduct and improved character. Two others, one an inmate of the Reformatory and the other of the Refuge Branch, whose cases have been brought to my notice are also shewn to be equally entitled to the same clemency, and will have their cases duly reported upon with the hope that the remission of a portion of their unexpired sentence may be secured and prove a benefit to them, and likewise in its effects produce a salutary influence on the other inmates of the Reformatory.

"On the morning of my visit there were ten inmates employed in various ways in the Refractory Ward. In the Isolated Ward there were 4, in the nursery 2, and in the general wards 136, making a total of 152. Of this number there were fifty-five employed in the industries of sewing, knitting and washing, from which revenue is derived; forty-eight were receiving instruction in these several branches; thirteen were employed in house and corridor cleaning; twenty-eight were employed in cooking, baking, and other domestic work, and of the remaining eight, there were two in the nursery, one in the hospital as nurse, two sick and three incapables.

"The books of record were found to be correctly kept, the entrance examination register shewing the date of reception, term of sentence, at what court convicted, place of birth, and residence, occupation, habits, social condition, religious denomination, degree of education, number of times committed, offence, age, together with the personal description, including weight and state of health of each inmate on entering the Reformatory.

"The register, in addition to what is contained in the entrance examination register, records the date of sentence, period of confinement, date of discharge, how discharged, and weight on day of discharge. The daily conduct register is kept, recording the deportment of each inmate to the close of each month, and then the total of this exhibit is transferred to the monthly conduct register, from which, at the termination of the sentence, the behaviour of each inmate is readily ascertained.

"The number of the inmates is taken each morning by the Superintendent or the Deputy when they are assembled at breakfast, and a register is kept shewing the daily distribution of the inmates at their various employments, and entered from the books of the nine attendants in charge. The number of sick or incapacitated are also written in this register. The prisoners' offence book records the date of offence, nature of offence, by whom reported, punishment, ward duration of punishment, and the signature of the Superintendent authorizing it. Books are also kept containing description of prisoners' clothing, record of visits, letters received, letters written, and one recording a monthly list of dismissals.

"The books kept regarding the officers and employes are, leave of absence

register, misconduct book, officers' and attendants' record, together with an application register, in which a description of the applicant is recorded, and reference as to position and ability. The books pertaining to the Bursar's department also exhibit care, and duly record the financial matters of the institution.

"Since the opening of the Reformatory, it has had 522 registered inmates, many of whom have been benefited by the disciplinary influences which result from suitable employment; and very satisfactory results have followed the instruction of inmates, in running sewing machines of various kinds, by which they have subsequently been able to earn a livelihood. It is therefore most desirable to encourage this growing interest by affording these inmates who shew a desire to receive the necessary training, the best opportunities to acquire a thorough knowledge of the work. The employment of a competent tailoress will therefore be arranged for, whose duties will be limited to instructing inmates in the work named.

"Appropriations for a speaking-tube from the workshop to the storeroom, also the painting of certain parts of the woodwork of the institution having been made, it is desirable that those improvements should be made as soon as possible, and the Bursar is authorized to have the tube made and put in place, and the necessary kalsomining done, after which the painting will be proceeded with.

"The internal condition of the building throughout I found to be in a satisfactory state as to order and cleanliness, and the Superintendent reports favourably in regard to the conduct and efficiency of the officials and attendants in charge.

Refuge Branch.

"In the Refuge branch, I found thirty-three girls, varying in age from four to fifteen years. Thirty of them were in the school-room on the day of my visit, two were engaged in the sewing-room, and one in the kitchen.

"The health of the inmates has been good, and the scholars were reported to be making satisfactory progress in acquiring the rudiments of an English education, and their behaviour generally such as to merit the approval of the teacher.

"By the resignation of Miss Meehan, on the 6th day of January last, the important position of teacher became vacant, and has been filled by the appointment of Miss Elliott, whose qualifications for the position will, no doubt, insure a large measure of efficiency in the instruction and management of the pupils under her charge.

"An examination of the books, eight in number, shewed them to be well and neatly kept, and are principally such as I have already referred to in these notes, as being kept in the Reformatory proper."

The notes on the second inspection were as follows:—

"An inspection of the Reformatory was commenced by me on the 28th August, and finished on the 30th, when I found 101 inmates, which number, compared with the corresponding date in 1882, shews a decrease of thirty-four. Within the past six months forty-eight have been received into the Reformatory, three dismissed from it. The present number are employed as under:

In sewing, knitting and washing, from which revenue is derived ..		59
Employment from which no revenue is derived:—		
Repairing clothing and cleaning corridors	12	
Cooking, baking, etc.	11	
Reformatory laundry work.....	5	
		28

In the nursery, hospital-rooms and sick	7	
Imbecile	5	
Under Punishment	2	
		14
Total number of Inmates		101

"In the nursery, besides the inmates in charge, there are two infants under the care of their mothers.

"The industrial work and employment of the institution (in many respects of so much importance,) is at present in a very satisfactory condition, an ample supply and a sufficient variety of work being on hand to keep the inmates busy for some time to come. The separate appliances and fittings for laundry work which have recently been put in place, are a great improvement and an advantage in economy of labour, thoroughly separating the city or other work requiring more skilled labour from that of the inmates.

"An examination of the prisoners' offence book does not indicate that, for the past six months there has been any material change in the conduct of the inmates; fewer punishments are recorded and those have been light, principally isolation from the others for short periods: but they bear about the same proportion to the population as those of the previous six months, when the number of inmates was greater.

"The Superintendent reports favourably, however, of the better discipline resulting from the stricter classification in the different wards, and in view of this fact it is deemed desirable to extend still further the classification by appropriating basement ward B. exclusively as the refractory ward. This arrangement will leave the ward at present in use as the refractory ward solely, in the occupancy of entrants who,. as formerly, will be kept in probation there, and will be removed to the other wards as their conduct and behaviour warrant.

"The internal condition of the building has been much improved by the painting which has been finished satisfactorily with the sum appropriated for the purpose.

"For some time past, attention has been directed to the large amount of water which the meter, lately placed in position, indicates as being used in the institution, and the engineer has been charged to look closely after the taps, baths and closets, to see that no waste occurs through their being in any way out of order, or otherwise than in a state of good repair.

"After thorough investigation it would appear that a certain amount of water, greater than is required, is used by drawing the supply directly from the city pressure. Directions have consequently been given to run the entire quantity used into the tanks and from them only draw the supply for all purposes. Another, and no doubt principal cause of waste, is chargeable to the mischievousness of some of the inmates, who seem to delight in deranging or breaking any of the taps or valves within reach, and thereby waste a much larger quantity of water than is used, before the damage is noticed and repaired. In order to effectually stop this, the pans and fittings in the closets which are not automatic will require to be fitted in that way, and the Public Works Department will therefore be requested to make the necessary change as soon as possible. To restrain those inmates who are so persistently destructive, it will be necessary to maintain a closer supervision over all the closets and taps in the Institution. The Bursar will see that the night watch faithfully carries out the present regulation which requires him to examine and report upon their condition after entering upon his duties each night; and as a further precaution, it is equally necessary that similar examina-

tions sbe made at least twice during each day. The Superintendent is therefore required to arrange and order one of the attendants, whose duty it shall be to make the required examination, forenoon and afternoon, and immediately report any break or leakage that may be discovered, together with the name or names of the inmates who may have been the cause of it.

"On the 30th inst. an escape from the Institution was effected under such conditions as to lead to enquiry with the view of determining as to the possibility of its recurrence through the adoption of similar plans and the use of the same or like means for its accomplishment. The time selected, and the means resorted to in order to insure success prove the runaway to be in possession of a full share of determination, adroitness and good judgment in the employment of means to effect her object. Her exit was made through a window the iron grating of which was presumed to be as securely fastened as any one of the others. The proper fastening of the one through which the escape was effected was, however, beyond question neglected when the gratings were first put in place. Otherwise it would have been impossible within the limit of time, and with the appliances, for any inmate to remove the iron work which had to be got out of the way. In order to insure against a similar successful effort the engineer is required to examine carefully every window in the inmates' quarters, and to see that the fastenings in each have been properly made. As the windows of the cells in ward B are being frequently broken the Bursar will require the Engineer to have substantial fastenings fitted inside each of the six cells in this ward and at a sufficient distance from the glass to prevent the occupants from reaching it and either wilfully or otherwise destroying it.

"An examination of the food served in the attendants' dining room, and also that supplied to the inmates shewed that in both cases it was well prepared and properly served. Opportunity has been given the inmates to make any statement of complaint or bring to notice any grievance which they may have. No complaints, however, have been made and the presumption therefore is that no cause exists.

"The Refuge for Girls was also visited and its affairs found to be in a satisfactory state."

Maintenance Expenditures.

These are shewn in the following table :—

SERVICE.	Total expenditure.	Average daily cost per inmate.	
	$ c.	cts.	mills.
Hospital expenses	77 45	0	1.25
Butcher's meat and fish	2,781 70	4	6
Flour, bread, and meal	1,891 60	3	1
Groceries	4,395 17	7	2
Bedding, clothing, and shoes	2,847 63	4	7
Fuel	3,014 95	5	0
Gas, oil, candles, etc.	768 87	1	3
Laundry and cleaning	767 62	1	3
Water	1,330 11	2	1
Stationery, advertizing, printing, etc	482 32	0	8
Religious instruction and school expenses	458 00	0	7
Furniture and furnishings	1,307 25	2	1
Stable expenses	276 73	0	4.50
Repairs, ordinary	157 51	0	2.50
Grounds and garden	447 23	0	7.35
Unenumerated	564 11	0	9.25
Salaries and wages	8,241 30	13	6
Total	29,809 55	49	..

It will be noticed that for the first time in the accounts of the Reformatory a charge for water is included ; the corporation having supplied sufficient water to meet the amount paid by the Government to have the service extended to the Reformatory. Had this item been omitted, the expenditures as compared with the previous year would have shewn a decrease of over $600. The only other noticeable increase is in the item of salaries, where the extra expenditure is accounted for by the employment of a clerk in the superintendent's office, and by small additions to the salaries of some of the officers. A large proportion of the charge for water should properly be included in the expenses of the laundry and in future the books will be so kept as to admit of this division being made. Another item which is increased is the charge for garden and grounds. This is caused by the cost of working and putting in condition for cultivation another plot of ground. The increase, however, is met by a decrease in the expenditure for vegetables, which are now largely supplied from the garden. There is, as com-

pared with the previous year, a decrease of $800 in the cost of groceries, in which item potatoes and vegetables are included.

Industrial Department.

The operations of this Department are shewn in the subjoined summaries:—

Sewing Department.

No. of days worked, 4682.

Total revenue	$2,249.80.
Less cost of material	566.70.
Net revenue	$1,683.10.

Daily earnings, 35 cents.

Laundry.

No. of days worked, 3086.

Total revenue	$1,361.45.
Less cost of soap, etc	274.86.
Net revenue	$1,086.59.

Daily earnings, 35 cents.

Knitting Department.

No. of days worked, 9206.

Total revenue	$578.31.
Less cost of material	150.00.
Net revenue	$428.31.

Daily earnings, 4 cents.

The gross and net earnings of the various departments were:

	Gross.	Net.
Sewing department	$2,249.80	$1,683.10.
Laundry	1,361.45	1,086.59.
Knitting department	578.31	428.41.
Miscellaneous sales	17.20	17.20.
Totals	$4,206.76	$3,215.20.

In the year preceding the one now under report, the receipts of the industrial branches were: gross, $4209.35, and net, $3076.46, shewing a slight increase during the latter year.

The reports of the Superintendent, the Surgeon, and the Superintendent of the Sunday school, and the statistics with respect to the inmates are appended:—

REPORT OF THE SUPERINTENDENT.

Toronto, October 10th, 1883

R. Christie, Esq.,

Inspector of Prisons and Public Charities, Ontario.

Sir,—I have the honour to submit to you the third annual report of the Reformatory and Refuge for the year ending Sept. 30th, 1883.

If the hopes entertained when entering on this reformatory work have not all been realized, enough has been done to encourage us in the arduous undertaking.

The experience of the last three years has shewn us how almost insurmountable are the difficulties to be overcome by those who earnestly wish to reform.

Short sentences for old transgressors are comparatively useless, reformation being a work of time. By referring to the statistical returns you will see that out of the 117 committed during the year, fifty-four are sentenced for six months, and that out of these fifty-four, twenty-two have been recommitted, clearly proving the inefficiency of short teams. Our desire is to reform the inmate rather than punish her crime. In the moral regeneration of mankind hope is a more powerful agent than fear: therefore, acting on this principle, we would recommend that a system of rewards be instituted; and that a trifling sum be given to each woman who does her work diligently and well, thus giving her an interest in her own work. This, we believe, would strengthen her in habits of industry, prove a strong incentive to good conduct, and be more effectual than the severest punishment.

Punishments have, of course to be resorted to for infringements of the rules of the reformatory. We try, however, to bear in mind the words of a celebrated philanthropist, "Do not further degrade in prison the woman who has come to it already degraded by her crimes."

The women who come to us have committed offences and consequently deserve punishment; they are also morally diseased and need a cure. Our desire is by moral training to make upright and industrious women rather than orderly prisoners.

Religious Services.

The religious wants of both Protestant and Roman Catholic inmates have been faithfully attended to.

Sunday School has been carried on regularly every Sunday morning, under the superintendence of W. H. Howland, Esq. Clergymen of the Ministerial Association have held services every Sunday afternoon and Tuesday evenings.

A priest, from St. Michael's, has celebrated mass every Sunday morning; and during several months of the year two of the Sisters of St. Joseph have given religious instruction on Sundays.

As of all reformatory agencies we know that religion is the first in importance, being most effective in its influence on the human heart and life, we therefore gratefully acknowledge these services.

Night School.

Night school is held for an hour four nights in the week and is fairly attended. The greatest care is given to those who can neither read nor write.

Several who did not know the alphabet are now able to read in the second book. These are inmates who have had long terms.

Library.

Through the liberality of the Government we have now an excellent library containing about 1,100 volumes, an extensive addition having been made during the past year.

Escapes.

Five inmates effected their escape. Two on the 11th of October, 1882, who were recaptured after eighteen hours. Two on the 9th of November; they were brought back after four days. One on the 7th of September; this inmate was away from the reformatory only for about four hours.

Deaths.

There have been no deaths among the inmates.

On the 3rd of August, inmate Burke's infant, aged four months, died after a short illness.

Nursery.

The nursery is now closed for the first time since the opening of the reformatory.

On the 1st of October, 1882, there were four children in the nursery. One was received since. Of these one was placed in the Girls' Home, three left with their mothers, one died.

Grading.

An isolated ward has been set apart where all inmates after their admission are kept for the first month. This ward is also used for troublesome inmates. They are there subjected to stricter discipline than the other women.

Industries.

You will observe a decrease in the revenue derived from the sewing and knitting this year. The reason of this is that there are a greater number of women required in the laundry, owing to the Central Prison washing being all done here.

We find the addition of a practical tailoress to the staff of great benefit to the inmates, especially to the younger portion who are sentenced for long terms; many of these are now competent to earn a good living at this trade.

We were pleased to receive from the Industrial Exhibition a first prize for "the best collection of work done by the inmates of any public institution." The prize money ($25) was divided among the workers.

Grounds and Gardens.

The grounds of the reformatory have been very much improved. A vegetable garden has been made. The tables of the inmates, staff and refuge have been supplied with fresh vegetables daily during the summer months.

Changes in Staff.

There have been a number of changes in the staff.

One attendant was discharged, one married, and three resigned. Five attendants have been appointed to replace them. During the year, with few exceptions, every attendant has performed her duty satisfactorily, and at the present time we believe that every member of the staff is conscientiously engaged in the performance of her duties, working for the good of the inmates.

Discharged inmates.

We endeavour, as far as possible to keep a watchful eye over all our discharged inmates, the statistical tables appended shew 151 discharged on the expiration of their term of sentence, of these twenty-six were placed in situations direct from the Reformatory, and supplied with sufficient clothing to make them appear respectable, eleven were taken care of by the ladies of the Sunday School, forty-six were returned to parents or guardians, thirty-three refused all advice or assistance and returned to their former evil lives, twenty-three were called for by relatives, six were sent to the Magdalen Asylum, some of these were totally unfit for labour of any description, five were sent to the Haven,

to remain there until employment could be found for them, one was taken in charge by an officer of the Salvation Army.

Out of the twenty-six placed in situations by the officers of the Reformatory, twelve are at present in their situations and are conducting themselves well, and giving satisfaction to their employers: two remained in their places for five months; one took a situation while her husband was absent, she has now joined him and they are living together in Hamilton; one has been recommitted, and three have gone back to their old haunts. We do not know where the remaining seven are at present.

Of the eleven taken charge of by the Ladies of the Sunday School, four are doing well, two have been re-committed, the whereabouts of five is uncertain. The one taken in charge by an officer of the Salvation Army, is now living with her husband, the Prisoners Aid Society have assisted in furnishing a cottage for them, they are doing well. Some of those discharged during previous years are living respectable lives, one has retained the same situation for the past two years. We are in constant correspondence with a number of those returned to their friends both in the city and at a distance.

INDUSTRIAL REFUGE.

Twelve girls have been admitted during the year, making now a total of thirty-six.

There were discharged four, two of these returned to their friends, the third was taken by her parents to the United States, and the fourth was placed in a suitable situation, having proved herself trustworthy, and being able to earn her living.

We consider the law, that sentences a girl to the Refuge for an indefinite period (not to exceed five years) but allows her to be placed in a situation before the expiration of that time if her conduct warrants it, an excellent law. Girls so placed are still under the supervision of the officials of the Refuge, and may be returned, if their conduct is not satisfactory to their employers, or if the girls are unfairly dealt with.

In this branch of the Institution there is nothing to remind the girls of prison or crime, all is bright and cheerful.

The constant watching, the healthful regular life and work, apportioned to their strength, has the effect of making them orderly, obedient, industrious and happy, as a proof of this, although the doors are never locked during the day, no attempt at escape has been made for the past two years. Girls are frequently sent short distances on messages, often trusted with money, no breach of confidence has ever taken place.

To shew the home-like feeling the girls have for the Refuge, we may cite the following cases: A little girl of thirteen years of age was sentenced for six months at the expiration of that time she begged to be allowed to remain. After several interviews with her parents, they consented, and she is now with us for an indefinite period. Another girl, twelve years of age, sent for one year wrote home asking permission to remain, this was refused and much against her wish she was sent to her parents.

The following number of articles have been made by the girls since January 1st, 1883:—

Sewing.—Night dresses, 8; chemises, 58; drawers, 57; aprons, 103: skirts, 56: dresses, 3; handkerchiefs, 12; table napkins, 25.

Knitting.—Stockings twenty-four pairs, mitts twenty-five pairs, and eighty-four pairs of stockings were footed; all this was done in addition to the house, laundry work, and mending.

Some excellent knitting and plain sewing was done for the Industrial Exhibition in September, for which a prize was given.

In January, Miss Meehan, teacher, resigned. She was replaced by Miss Elliott. The children are continuing to make rapid progress in every branch of their studies. At the visit of the Grand Jury in May last, four of the gentlemen left a dollar each to be expended in prizes, to this fund the officers of the Reformatory added six dollars, and five prizes were competed for, the girls that gained the prizes were taken to Niagara Falls for a day. This treat was intensely enjoyed by them.

They also fully appreciated two afternoons spent in a yacht sailing round the harbour.

One trip was kindly given by W. H. Howland, Esq., and the other by the Government. We allow them to be taken for walks to High Park and the Exhibition Grounds.

We are often pleased to attend little entertainments got up by the girls themselves, consisting of recitations, songs and dialogues.

The members of the staff here, are performing their duties most satisfactorily.

It is much to be regretted that many more of the poor little waifs, that can be seen any day walking the streets of Toronto or standing at the street corners soliciting the passers by to buy their papers, or to bestow a charity on them, are not gathered into the Refuge, where they would be taught everything necessary and useful for a woman to know.

I have the honour to be, sir,

Your obedient servant,

M. J. O'Reilly,

Superintendent.

Annual Statistical Report of the Andrew Mercer Ontario Reformatory for the Year ending September 30th, 1883.

Number of inmates, October 1st, 1882	145	
" " since received	117	
" " recaptured after escape	1	
		263
Discharged on expiration of sentence	151	
" " payment of fines	4	
" " authority of Court	1	
" by remission of sentence	3	
Transferred to Refuge Branch	1	
" " Lunatic Asylum	1	
Remaining in custody, September 30th, 1883	102	
		263

Nature of Sentences.

Sentenced direct to Reformatory	84	
" to common gaols	33	
		117

Nationalities.

England	13	
Ireland	33	
Scotland	3	
Canada	49	
United States	15	
France	1	
Gibraltar	1	
Malta	1	
Germany	1	
		117

Religious Denominations.

Episcopalians	30	
Roman Catholics	58	
Presbyterians	5	
Baptists	1	
Methodists	21	
Lutheran	1	
Unknown	1	
		117

Social Condition.

Married	65	
Single	52	
		117

Temperate or Intemperate.

Temperate	22	
Intemperate	95	
		117

Education.

Read and write	56	
Read only	28	
Neither read nor write	33	
		117

Ages.

Under 18	13	
From 18 to 20	11	
" 20 to 30	39	
" 30 to 40	29	
" 40 to 50	18	
" 50 to 60	5	
" 60 to 70	2	
		117

Sentences.

For 2 months	1	
" 6 "	54	
" 7 "	3	
" 9 "	2	
" 12 "	24	
" 15 "	4	
" 16 "	1	
" 18 "	10	
" 20 "	4	
" 22 "	2	
" 23 "	8	
" 1 year and 360 days	1	
" " 364 days	2	
" 1 year, 11 months and 27 days	1	
		117

Crimes.

Bigamy	1
Bringing stolen goods into Canada	1
Deserting child	1
Drunkenness	24
Drunkenness and creating a disturbance on the street	1
Drunkenness and disorderly conduct	1
Drunkenness and prostitution	2
Drunkenness and vagrancy	1
Exposing person	1
Frequenter of a disorderly house	4
Habitual frequenter of a house of ill-fame	2
Inmate of a disorderly house	1
Inmate of a house of ill-fame	10
Keeping a disorderly house	6

Keeping a house of ill-fame	8	
Larceny	20	
Receiving stolen goods	1	
Stealing horse and buggy	1	
Vagrancy	24	
Vagrancy and breaking windows	1	
Vagrancy and inmate of a disorderly house	1	
Vagrancy and prostitution	3	
Unlawfully wounding	1	
Wandering	1	
		117

Occupations.

Bookfolder	1	
Charwoman	9	
Domestics	4	
Housekeepers	11	
Laundresses	5	
No occupation	16	
Prostitutes	39	
Servants	29	
Seamstresses	1	
Tailoresses	1	
Teacher	1	
		117

COUNTIES from which inmates were received.

COUNTIES.	Sentenced direct to reformatory.	Sentenced to common gaols and subsequently removed.	Total.
Brant	2		2
Bruce	1		1
Carleton	12	2	14
Essex	6		6
Frontenac	2		2
Kent	1		1
Lambton	1		1
Leeds and Grenville	1		1
Lincoln	3		3
Middlesex	1	1	2
Ontario	1		1
Oxford	4		4
Simcoe		2	2
Waterloo	1		1
Wellington	3		3
Wentworth	20	1	21
York	25	27	52
	84	33	117

NUMBER OF DAYS WORK DONE BY INMATES DURING THE YEAR.

Industrial Department.

Knitting to fill orders	9,206	
Shirt, quilt, overall, and pant making	4,682	
Laundry (city and Central Prison)	3,086	
		16,974

Domestic Labour.

Assisting in library	2
Corridor cleaning	3,771
Cooks	1,484½
Bakery	839
Dining room	1,734
Laundry (inmates, officers and attendants)	2,767
Learning to sew	2,942½
Learning to knit	2,010
Sewing and mending for Reformatory	2,140½
" " own clothing	374½
Nursery (attending infants)	548
	18,613

DAILY average population of the Reformatory during the year ending September 30th, 1883.

Day of Month.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.
1	145	160	169	167	159	145	125	119	109	111	102	105
2	145	160	168	166	159	146	125	119	109	111	102	105
3	144	159	168	165	158	146	124	119	107	111	103	105
4	142	159	168	165	157	145	123	118	107	111	103	105
5	142	159	166	165	157	145	121	118	107	111	103	105
6	146	159	165	161	157	145	121	117	106	109	103	103
7	146	159	165	161	156	141	121	117	106	110	105	103
8	151	162	164	160	156	141	121	116	106	110	105	103
9	151	162	164	160	155	140	121	119	106	110	104	101
10	154	160	164	159	155	140	120	118	106	110	103	101
11	154	160	166	158	154	140	120	119	108	108	103	102
12	155	160	166	158	154	140	119	119	108	108	103	101
13	155	160	166	160	154	140	119	116	111	108	103	101
14	155	161	168	160	156	138	120	116	111	108	103	101
15	155	162	168	160	154	138	120	116	111	107	102	101
16	155	167	168	160	154	138	120	117	109	107	103	101
17	155	166	168	160	153	138	121	117	109	106	104	101
18	154	166	168	159	152	138	119	116	112	106	104	100
19	152	166	168	159	152	138	117	116	111	105	102	100
20	153	166	168	159	150	138	116	111	111	104	102	100
21	153	165	167	159	149	138	115	110	111	104	102	100
22	155	165	166	163	148	138	115	119	111	103	101	99
23	155	165	165	163	148	138	115	111	111	103	101	99
24	153	165	165	163	148	138	114	110	111	103	102	99
25	153	171	165	162	146	135	114	110	111	103	102	99
26	153	171	165	161	146	\	114	110	111	103	101	99
27	162	170	165	161	146	\	118	110	113	103	101	100
28	162	170	165	161	145	130	118	110	111	103	101	102
29	162	170	167	161	.....	128	118	106	111	103	103	104
30	161	169	167	161	.....	124	118	106	111	103	103	102
31	160	.....	167	161	.....	125	.....	106	.....	102	103	.....
	4738	4914	5159	4998	4278	4282	3572	3542	3282	3304	3182	3547

Total 48,798. Average per day.....133$\frac{2}{3}\frac{2}{6}\frac{3}{5}$
" " month.....4066$\frac{8}{1\frac{1}{2}}$

REFUGE FOR GIRLS.

Annual Statistical Report.

Number of inmates, October 1st, 1882	28
since received	12
	—40
Since discharged by expiration of sentence	2
by Lieut.-Gov's. warrant	1
Apprenticed by order of Inspector (under provision of the Act)	1
Remaining in custody September 30th, 1883	36
	—40

Nature of sentence.

Direct to Refuge	8
Transferred from Reformatory	4
	—12

Nationalities.

England	4
Canada	6
Ireland	2
	—12

Religious denominations.

Episcopalians	8
Roman Catholics	2
Methodists	2
	—12

Education.

Read and write	6
Read	2
Neither read nor write	4
	—12

Ages when committed.

12 years	2
13 "	5
14 "	1
15 "	4
	—12

Offences.

Vagrancy	2
Larceny	6
Incorrigiblity	3
Prostitution	1
	—12

Sentences.

Six months	1
Four years	1
Five "	5
Indefinite	5
	—12

Counties received from.

York	5
Leeds	2
Middlesex	2
Elgin	1
Ontario	1
Lincoln	1
	—12

	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.
1	28	32	32	32	33	33	33	33	33	32	33	34
2	28	32	32	33	33	33	33	33	33	32	33	34
3	28	32	32	33	33	33	32	33	33	32	33	34
4	28	32	32	33	33	33	32	33	33	32	33	34
5	28	32	32	33	33	33	32	33	33	32	33	34
6	28	32	32	33	33	33	32	33	33	32	33	34
7	29	32	32	33	33	33	32	33	33	32	33	34
8	29	32	32	33	33	33	32	33	33	32	33	34
9	29	32	32	33	33	33	33	33	33	32	33	34
10	29	32	32	33	33	33	33	33	33	33	33	34
11	29	32	32	33	33	33	33	33	33	33	33	36
12	29	32	32	33	33	33	33	33	33	33	33	35
13	29	32	32	33	33	33	33	33	33	33	33	35
14	29	32	32	33	33	33	33	33	33	33	33	36
15	29	32	32	33	33	33	33	33	32	33	33	36
16	29	32	32	33	33	33	33	33	32	33	33	36
17	29	32	32	33	33	33	33	33	32	33	33	36
18	29	32	32	33	33	33	33	33	32	33	33	36
19	29	32	32	33	33	33	33	33	32	33	33	36
20	31	32	32	33	33	33	33	33	32	33	33	36
21	31	32	32	33	33	33	33	33	32	34	33	36
22	31	32	32	33	33	33	33	33	32	34	33	36
23	31	32	32	33	33	33	33	33	32	34	33	36
24	31	32	32	33	33	33	33	33	32	34	33	36
25	31	32	32	33	33	33	33	33	32	34	34	36
26	31	32	32	33	33	33	33	33	32	34	34	36
27	32	32	32	33	33	33	33	33	32	34	34	36
28	32	32	32	33	33	33	33	33	32	34	34	36
29	32	32	32	33	.....	33	33	33	32	34	34	36
30	32	32	32	33	.....	33	33	33	32	34	34	36
31	32	.....	32	33	.....	33	.....	33	.....	34	34	36
	922	960	992	989	924	1023	984	1023	974	1025	1030	1058

REPORT OF THE SURGEON.

Toronto, October 1st, 1883.

R. Christie, Esq.,

Inspector of Prisons and Public Charities:

Sir,—I have the honour of herewith submitting to you my Annual Report, as Surgeon of the Andrew Mercer Ontario Reformatory for Females, and Industrial Refuge for Girls, for the year ending September 30th, 1883.

Reformatory.

The health of the inmates, during the past year, was very good, and I am pleased to report that no death has occurred among either the Reformatory or Refuge inmates.

The hospital record is a decided improvement on the preceding year, the average daily number in hospital being now 1·57 as against 2·61 last year. The total number who spent some portion of time under treatment in the hospital last year was fifty-six, while, during the year just closed there were only thirty-six hospital patients. Of this number fourteen spent from one to seven days in hospital; five were under treatment for from eight to fourteen days; six from fifteen to twenty-one days. Of the remaining five cases the days spent by each severally, with the disease for which treated were :—

29 days	Phthisis
32 "	Persistent vomiting.
35 "	Disorders of pregnancy and childbirth.
47 "	Acute rheumatism.
212 "	Chronic phthisis.

One patient in the last stage of phthisis was discharged from the institution on the 5th day of December, 1882, on an order from the Deputy Minister of Justice, and died shortly after.

The daily average number of cases treated, other than hospital cases, during the year was 8.13. The daily average of these cases which were sick and wholly disabled from work was only 1·09.

During the past year, as in former years, there were several cases of insanity, one of which was removed to an asylum. Two now await removal, the proper papers having been made out; while there still remain a few cases of a mild type. From such cases, as well as the old and debilitated women, but little can be expected in the way of work, and at the same time they usually have some chronic ailment requiring more or less treatment.

The health report of the Reformatory can scarcely be compared with that of any institution of mixed sex, or composed wholly of males, for the reason that the inmates are drawn chiefly from two classes, viz. : professional prostitutes and chronic drunkards, a course of life in either case most prejudicial to the preservation of health. Considering these facts it will appear that the health report is unexceptionally good.

During the year seventeen inmates occupied the specific ward, which remains isolated for the treatment of inmates suffering from syphilis. Of this number four were treated for syphilis in the secondary stages, while thirteen were treated for tertiary syphilis. The largest number under treatment at one time was nine, while the daily average number under treatment was 6·58. Of the number under treatment, eight were in the ward at the opening of the year, and the year closes with nine inmates still under treatment, three for secondary and six for tertiary syphilis.

There has been but little complaining by inmates, and I have found very slight grounds existing. The introduction of a variety of vegetables in the diet list from the garden of the Reformatory has done good service in maintaining inmates in good physical condition.

I have, as heretofore, made inspections of work-rooms, cells, closets, etc., at irregular intervals and have to report that they are clean, dry, light and well ventilated.

The Nursery.

The nursery has only had four juvenile occupants during the year, and I have only had to prescribe in this department, in all some thirty-three times.

Only one birth took place, that being still-born, the mother being a syphilitic patient.

PRESENTATIONS for treatment during the year, excluding hospital cases.

DISEASE.	No.	DISEASE.	No.
Abrasions	11	Colic, biliary	1
Abscess	17	Cystitis	3
Anæsthesia	1	Cramps	62
Ague	1	Diarrhœa	49
Amenorrhœa	32	Deafness	3
Anæmia	2	Dysentery	1
Aphonia	1	Dysmenorrhœa	33
Asthma	1	Erosion or ulceration os. uteri	25
Ascaris Lumbricoides	10	Eczema	4
Acne	7	Endometritis	27
Bronchitis, chronic	2	Enteritis	2
Boils	2	Erysipelas	6
Bilious	25	Earache	10
Burns and scalds	7	Erythema	11
Catarrh, nasal	1	Febricule	4
Cellulitis, pelvic	1	Fissure, os. uteri	3
Chromophytosis	1	Glossitis	1
Chancroids,	22	Gastralgia	46
Contusions and wounds	18	Gastritis	2
Corneitis	3	Gonorrhœa	3
Cephalalgia	125	Hernia, umbilical	2
Conjunctivitis	11	Hæmoptysis	3
Cough	93	Hysteria	6
Colds, simple	149	Hoarseness	6
Colds, severe	30	Herpes circinatus	5
Congestion, liver	1	Inflammation, face	23
do kidney	25	do glands	13
do uterus	2	do bursæ	7
do lungs	2	do breast	1
do ovaries	1	do inferior extrem	12
Constipation	355	do superior extrem	16
Convulsions	30	do ear	3

MONTHLY record of cases other than hospital cases.

MONTHS.	Casuals or Ordinary Cases Presenting.				Dark Cell.	Syphilitic Ward.	
	Total cases seen.	Daily average of cases.	Total cases sick.	Daily average sick.	Visits to inmates.	Total inmates.	Daily average
October, 1882	212	6·84	37	1·19	15	9	7·87
November "	209	6·96	23	·76	4	8	4·36
December, "	266	8·58	18	·58	..	4	3·67
January, 1883	264	8·51	22	·71	3	4	4·00
February, "	253	9.03	44	1·57	..	4	4·00
March, "	318	10·25	56	1·80	..	3	3·00
April, "	274	9·13	48	1·60	..	6	4·53
May, "	282	9·09	35	1·13	..	6	5·35
June, "	260	8·66	30	1·00	..	8	5·76
July, "	267	8·61	30	·96	6	9	8·22
August, "	185	5·96	22	·71	4	9	9·00
September, "	178	5·93	33	1·10	2	9	9·00

Daily average of cases treated, other than hospital cases, during the year, 8·13.

CASES TREATED in the Reformatory Hospital.

DISEASE.	No.	DISEASE.	No.
Abscess	2	Insanity	1
Amenorrhœa	1	Neuralgia	1
Bilious	2	Obstipation	1
Bronchitis, chronic	1	Ovaritis	1
Childbirth	1	Phthisis	3
Contusions	2	Pleuritis	1
Convulsions	5	Pregnancy, disorders of	1
Debility	1	Rheumatism, chronic	1
Gastralgia	1	do acute	3
Glossitis	1	Retention of Urine	1
Hysteria	1	Sprain	1
Hæmoptysis	1	Scalded foot	1
Indigestion	2	Salivation	1
Inflamed knee	1	Vomiting	1
do xilla	1		

PRESENTATIONS for treatment during the year, excluding hospital cases.—*Continued.*

DISEASE.	No.	DISEASE.	No.
Indigestion and dyspepsia	179	Pruritis	7
Insomnia	5	Pain, alleged and simple	202
Irritation of bladder	8	Piles	15
Incontinence of urine	7	Pediculæ	6
Insanity	27	Pregnancy, disorders of	2
Iritis	1	Prurigo	1
Leucorrhœa	29	Retention of urine	6
Lumbago	5	Rheumatism, gonorrhœal	3
Malingering and frivolous	104	do acute	18
Menorrhagia	54	do chronic	57
Metrorrhagia	5	Syphilis, secondary	16
Metritis	30	do tertiary	75
Menopause	2	Sore throat	85
Night sweats	2	Sprains	22
Nausea	24	Sciatica	1
Neuralgia	31	Spontaneous orgasm	1
Nymphomania	17	Suppression of urine	1
Otorrhœa	2	Tenia solium	1
Œdema	1	Toothache	60
Obstipation	1	Teeth extracted	53
Operation, extracting needle	3	Tonsillitis	1
Operation, for nævi	1	Urticaria	1
Ovaritis	7	Ulcers	17
Pleuritis	1	Vertigo	15
Pharyngitis	4	Varicella	1
Phthisis	15	Vomiting	5
Pneumonitis	3	Weakness and debility	132
Phlebitis	1		

MONTHLY RECORD of hospital cases.

MONTHS.	Total inmates.	Total days.	Average inmates per day.	MONTHS.	Total inmates.	Total days.	Average inmates per day.
October	4	8	.25	April	5	64	2.13
November	10	62	2.06	May	5	77	2.48
December	12	72	2.32	June	6	78	2.60
January	5	45	1.45	July	2	53	1.70
February	3	10	.35	August	2	46	1.48
March	2	15	.48	September	3	44	1.46

Average number of inmates per day, for the year, 1.57, as against 2.61 the preceding year. The year closed with three inmates in the hospital, one being a case of chronic consumption, one acute rheumatism, and one general debility associated with insanity.

INDUSTRIAL REFUGE FOR GIRLS.

With regard to the inmates of the Refuge I cannot do better than to repeat the language of my report of last year, wherein I said, "I am pleased to be able to report the health of the girls in the Refuge as excellent. Very few have been confined to their beds, and those few for only a few days with some slight ailment. No death has occurred nor epidemic prevailed. No serious injury or accident has interfered with the usual routine of work, study, or recreation. The girls are healthy looking, cheerful, industrious, studious and well behaved. In fact the place partakes more of the character of the home of a happy family."

Following are the diseases or ailments treated, with the number of treatments for each, during the year.

Disease.	No.	Disease.	No.
Aphonia	2	Ottorrhœa	1
Cephalalgia	1	Pediculæ	1
Cold	3	Rheumatism	2
Constipation	7	Ringworm	4
Contusions	2	Scrofula	9
Diarrhœa	1	Sprains	7
Eczema	6	Syphilis	5
Frivolous	4	Sore throat, simple	14
Febriculæ	1	Sore throat, ulcerated	6
Gonorrhœa	1	Tonsillitis	5
Indigestion	3	Teeth extracted	5
Inflam., maxilla	1	Toothache	4
Incontinence of urine	2	Varicella	1

I have the honour to be, Sir,

Your obedient servant,

John S. King, M.D.,

Surgeon.

REPORT OF THE SUPERINTENDENT OF THE SUNDAY SCHOOL.

Sir,—The year just closed has been, on the whole, one of encouragement to the teachers, and in a spirit of thankfulness they present their third annual report. Nothing especially new or important has occurred in connection with the work. The weekly sessions have been held without intermission during the year, the average attendance being, adults, forty-one, children from the Refuge, twenty-one; the teachers number twenty, with an average attendance of fourteen.

The International scheme of S. S. Lessons has been used, together with the reading and recitation of portions of God's word. Besides the regular teaching in the classes, the Superintendent and Assistant-Superintendent have conversed individually with any who have expressed a desire to speak with them; visiting also the corridors, cells and hospital, and they have reason to believe that their efforts in these departments have frequently been a means of blessing to those with whom they have come in contact.

The conduct of the inmates during the hours of school has been exceptionally good, and there are a few who, having openly expressed their firm determination to reform, are presenting in their daily lives more or less evidence of their sincerity.

Eleven inmates have been met on the morning of their discharge, by the teachers, all of whom were placed either in situations, lodgings or the Haven, one going to the Magdalen Asylum. At least, two of this number have returned to the Institution; two have done remarkably well, two indifferently well, and of the remainder we have no trace.

Eight of the discharged inmates have been admitted to the Haven immediately, and three a week or more after their discharge. One only of this number has behaved herself creditably; other two have had several situations, and *again*, within the past fortnight, have been given a trial. It is but just to the teachers to state, in view of the smallness of the percentage of those doing well who have been discharged in their care, or who have been admitted to charitable institutions, that this discouraging result is accounted for by the fact that almost all the promising cases are appropriated as servants by householders, previous to their discharge from the Institution.

The Prisoners' Aid Association and the teachers have assisted five married women to start in housekeeping, and three of this number are maintaining themselves honourably and respectably; two have fallen into old habits, but, so far, have managed to keep from being arrested, One of the five mentioned has recently been received into the membership of one of the Presbyterian churches in the city, and last Sunday evening two interesting young women, both discharged a few months ago, occupied the pew of one of the teachers, in the same church. Many of the discharged inmates attend the weekly Bible Class of the Prisoners Aid Association, and evangelistic services held by the Superintendent, on Chestnut St.

Correspondence between a number of those who have returned to friends, and the teachers, is regular and frequent. By this means we have learned of the marriage of two of the discharged inmates, one in the neighbourhood of Belleville, and the other in the West. Two of those discharged last year have continued to correspond with the teachers; both are living in good situations in towns east of Toronto.

In some instances situations have been found for discharged inmates from the Roman Catholic department; it has been impossible, however, for the teachers to follow up these cases.

The School has been addressed from time to time by Christian friends interested in the work, and these addresses have invariably been listened to with marked attention. Through the kindness of the Upper Canada Bible Society, the teachers were in a position to distribute to each inmate, in both Reformatory and Refuge, a copy of the Holy Scriptures at Christmas, which was accompanied by a very pretty Christmas card, with an appropriate Bible text, the gift of the teachers. The Tract Society has supplied us with a quantity of select Christian literature, which has been greatly appreciated by the inmates. Thanks are due also to the Secretary of the Y. M. C. Association, for a number of copies of the Bulletin; also to the Committee of the Hospital for Sick Children, for a quantity of illustrated religious papers. Quantities of cast-off clothing have been distributed when necessity required.

Attention is respectfully directed to the want of more thorough classification, and to the fact that many of the sentences, especially some of those given by the Police Magistrate of the City of Toronto, are noticeably *short* in comparison with others. Short sentences are generally unproductive of good results, and our teachers have unitedly desired that this matter should be brought under your notice.

We cannot speak too highly of the scope and work of the Industrial Refuge for Girls, and we look forward with satisfaction to the time when large numbers of the *vagrant* children of the Province will find in this well-conducted institution a home, where they will be subjected to good influences, and taught to become useful members of society.

The teachers have been greatly strengthened in their work by the co-operation and sympathy of the officers of the Institution, and they desire to embrace this opportunity of recording their appreciation of the marked kindness and courtesy which they have invariably received at their hands.

Your obedient servant,

W. J. Howland,
Superintendent.

Lizzie J. Harvie,
Assistant-Superintendent, A. M. R. S.

R. Christie, Esq.,
Inspector of Prisons.

SIXTEENTH ANNUAL REPORT

OF THE

INSPECTOR OF PRISONS AND PUBLIC CHARITIES

ON THE

ASYLUMS FOR THE INSANE

AND THE

ASYLUM FOR IDIOTS,

OF THE

PROVINCE OF ONTARIO,

BEING FOR THE YEAR, ENDING 30TH SEPTEMBER,

1883.

Printed by Order of the Legislative Assembly.

Toronto:
PRINTED BY C. BLACKETT ROBINSON, 5 JORDAN STREET.
1884.

OFFICE OF THE
INSPECTOR OF PRISONS AND PUBLIC CHARITIES, ONTARIO.
PARLIAMENT BUILDINGS, TORONTO, DECEMBER, 1883.

SIR,—I have the honour to transmit herewith, to be presented to His Honour the Lieutenant-Governor, the Sixteenth Annual Report upon the Asylums for the Insane and the Asylum for Idiots, of the Province of Ontario, being for the official year ending 30th September, 1883.

I have the honour to be,

Sir,

Your most obedient servant,

W. T. O'REILLY,
Inspector.

The Honorable
ARTHUR STURGIS HARDY, Q.C., M.P.P.,
Secretary for the Province of Ontario,
Toronto.

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LUNATIC AND IDIOT ASYLUMS.

SIXTEENTH ANNUAL REPORT

OF THE

Inspector of Prisons and Public Charities

FOR THE

PROVINCE OF ONTARIO,

FOR THE YEAR ENDING SEPTEMBER 30TH, 1883.

Printed by Order of the Legislative Assembly.

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1884.

OFFICE OF THE

INSPECTOR OF PRISONS AND PUBLIC CHARITIES, ONTARIO,

PARLIAMENT BUILDINGS, TORONTO, NOVEMBER, 1883.

To the Honourable JOHN BEVERLEY ROBINSON, *Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:—

I beg to submit herewith the Sixteenth Annual Report upon the Lunatic and Idiot Asylums of Ontario, being for the official year ending 30th September, 1883.

I have the honour to be,

Your Honour's most obedient servant,

W. T. O'REILLY,

Inspector.

ASYLUMS FOR THE INSANE AND IDIOTIC.

My last report, which brought the work of the Department down to the close of the official year (30th September, 1882), shewed the number of persons Insane and Idiotic, or Feeble-minded, actually in residence in the Provincial Asylums to be 2,742, to which were added 33 persons in the Insane Convict Wards of the Dominion Penitentiary at Kingston, and 47 persons certified to be insane or idiotic confined in the Common Gaols, making a total of 2,822 persons actually under public accommodation on that date. When to these were added 29 Lunatics and 55 Idiotic and feeble-minded persons under certificate but not then admitted and 27 patients of the various Institutions at their homes on probation, a total was presente dof 2,933 persons of unsound mind officially known to the Department

I have this year to report a considerable advance on the figures presented last year. On the 30th September, 1883, instead of 2,742 patients in the Provincial Asylums, we find in actual residence, 2,825; an increase of 83, or

3.02 per cent. There is a decrease of two in the number confined in the Insane Wards of the Kingston Penitentiary, and the number in the Common Gaols awaiting removal, at the close of the year, was reduced from 47 to 34. To all these are to be added, the patients who were at their homes on probation, 23, and the applications on the files of the various asylums awaiting vacancies, and a total is shewn of 3,070 Insane and Idiotic persons within the official cognizance of the Department, an increase of 137 over the previous year.

The manner in which the Insane and Idiotic persons actually under accommodation in the various institutions were distributed on the 30th September, 1883. and on the corresponding date in the previous year is shewn in the following table :—

PLACE OF CONFINEMENT.	30th September, 1882.			30th September, 1883.		
	Male.	Female.	Total.	Male.	Female.	Total.
Asylum for the Insane, Toronto	346	355	701	358	345	703
Asylum for the Insane, London	455	451	906	440	455	895
Asylum for the Insane, Kingston	223	214	437	230	219	449
Asylum for the Insane, Hamilton	225	239	464	246	301	547
Total Insane in Asylums	1249	1259	2508	1274	1320	2594
Asylum for Idiots, Orillia	120	114	234	122	109	231
Total number in Asylums	1369	1373	2742	1396	1429	2825
Insane Convicts in Kingston Penitentiary	31	2	33	29	2	31
Insane and Idiotic persons in Common Gaols	32	15	47	21	13	34
Total number of Insane under public accommodation	1432	1390	2822	1446	1444	2890
Number of applications on file for admission to Asylum for the Insane, Toronto.				2	4	6
Number of applications on file for admission to Asylum for the Insane, London.				6	6	12
Number of applications on file for admission to Asylum for the Insane, Kingston				2	4	6
Number of applications on file for admission to Asylum for the Insane, Hamilton				10	14	24
Number of applications on file for admission to Asylum for Idiots, Orillia				63	46	109
Out on probation				12	11	23
Total Insane and Idiotic known to Asylum authorities on 30th Sep., 1883.				1541	1529	3070

There have been no very material changes in the means of accommodation for patients during the past year. During the year the dwelling in which the Bursar at the Hamilton Asylum resided was taken, and accommodation for 19 female patients created. With this exception, no increase has been possible.

The new cottage at Kingston Asylum is approaching completion, and it is expected it can be opened about the 1st January, 1884. It is intended to accommodate about 75 patients. A new building is in course of erection at Hamilton, which will contain about 60 beds. It is promised for June, 1884. With these two new buildings it seems probable that we shall be able to provide for the increase which may be reasonably expected during the year 1884.

ASYLUMS.	Number of beds.			Number in residence on 30th Sept., '83.			Number of vacancies.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Toronto	354	348	702	358	345	703	.....		.....
London	452	452	904	440	455	895	12	.....	.....
Kingston	230	215	445	230	219	449	.....	.....	.....
Hamilton	266	300	566	246	301	547	20	.....	.....
Orillia	109	111	220	122	109	231	.....	2	.....
	1411	1426	2837	1396	1429	2825	.....	.....	.....

From this table it will be seen that, while there were at the end of the year 15 more beds in all the institutions for males than there were inmates, on the female side there were three more inmates than beds.

Toronto Asylum was over filled on the male side, but had three vacancies on the female side.

London Asylum was not quite filled on the male side, but was over filled on the female side.

Kingston Asylum was quite full on the male side, and over filled on the female side.

Hamilton Asylum had 20 vacancies on the male side, but had one patient over its number on the female side.

Orillia Asylum was quite full on the male side, but had two vacancies on the female side.

On the whole, with 2,837 beds in all the institutions, there were 2,825 patients in residence; and when it is considered that there were a number of patients out on probation whose beds could be claimed for them at any moment, should it be necessary to return them to the Asylum, it will be seen that asylum accommodation of the Province was worked up to its utmost capacity, and doing really more work than it should be called upon to do.

In the following table the movements of the entire asylum population for the year have been collated. It will be seen that the number of Insane and Idiotic persons remaining in the Asylums on the 30th September, 1882, was 2,742, and thus on the same date in 1883 the number had reached 2,825—an increase for the year of 83.

The total number of patients under treatment during the past official year was 3,285, as against 3,175 the previous, an increase of 110, exactly the same as in the previous year.

TABLE No. 1.

	Toronto Asylum.			London Asylum.			Kingston Asylum.			Hamilton Asylum.			Orillia Asylum.			Grand Totals.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Number of Patients in Asylums on 1st October, 1882	346	355	701	455	451	906	223	214	437	225	239	464	120	114	234	1369	1373	2742
Admitted during the year ending 30th September, 1883	76	83	159	73	72	145	54	40	94	50	71	121	15	9	24	268	275	543
Total number under treatment during the year	422	438	860	528	523	1051	277	254	531	275	310	585	135	123	258	1637	1648	3285
Admitted by transfer from one Asylum to another	3	.....	3	....	.....	.....	.....	... .	....	27	25	52	.....	.....	.....	30	25	55
Total number on Asylum registers during the year	425	438	863	528	523	1051	277	254	531	302	335	637	135	123	258	1667	1673	3340
Discharged cured	29	36	65	26	18	44	13	12	25	26	14	40	.....	.....	.....	94	80	174
Discharged improved	2	9	11	10	9	19	7	9	16	3	3	6	.....	.....	.....	22	30	52
Discharged unimproved, as not insane, or taken away by friends	6	12	18	4	7	11	2	2	4	2	3	5	3	2	5	17	26	43
Total number discharged during the year	37	57	94	40	34	74	22	23	45	31	20	51	3	2	5	133	136	269
Escaped	1	.....	1	2	...	2	.....	.....	.....	4	.....	4	1	.....	1	8	.....	8
Died	15	24	39	34	21	55	25	12	37	18	14	32	8	12	20	100	83	183
Transferred from one Asylum to another	14	12	26	12	13	25	.....	.....	.....	3	.....	3	1	.....	1	30	25	55
Total number discharged, escaped, died, and transferred during the year	67	93	160	88	68	156	47	35	82	56	34	90	13	14	27	271	244	515
Number of Patients remaining in Asylums on 30th September, 1883	358	345	703	440	455	895	230	219	449	246	301	547	122	109	231	1396	1429	2825

Admissions to Asylums.

The statistics as to admissions shew an increase for the present year. In 1882 there were in all 525 patients admitted; in 1883 the number reached 543. It should be noted, however, that of the admissions in 1883, 24 were idiotic persons, and these should not be put down to the debit of the insane population of the Province.

The large number of transfers shewn on the foregoing table are due to the fact that the removal of all the patients from the Idiot Wards of the Hamilton Asylum to Orillia created vacancies in the former institution, which were used to relieve the pressure upon the London and Toronto Asylums.

The following information, in respect to the nationalities, religious denominations and social state of the 543 patients admitted, including transfers, as well as of the aggregate admissions of all preceding years since 1841, is compiled from the records of the various institutions.

Social State.

	Of those admitted during year, including transfers.	Of total admissions, including transfers.
Married	282	5478
Unmarried	316	5568
	598	11046

Nationalities.

Canadian	341	4461
English	68	1557
Irish	96	2866
Scotch	43	1204
United States	16	331
Other Countries or unknown	34	627
	598	11046

Religious Denominations.

Church of England	135	2790
Roman Catholic	128	2478
Presbyterian	128	2281
Methodist	125	1997
Other denominations or unknown	82	1500
	598	11046

Discharges from Asylums.

Under this head, we find increased figures, which are very gratifying; those discharged cured during the year numbered 174, against 159 for the previous year. There is also an increase in the number discharged improved.

The ratio of recoveries to admissions, 33.52 per cent., has been higher during the past year than in any year since 1877; and in the cure of the male patients it has reached a higher point than has ever been recorded in the history of these institutions, viz. 37.15 per cent. These ratios are arrived at, of course, after eliminating the statistics relating to the Idiot Asylum.

Deaths in Asylums.

There is nothing special to note in the record of deaths in the Asylums as compared with the previous year; there have been slight increases in Toronto, London, and Kingston. A marked diminution in the number of deaths in Hamilton, and a considerable increase in number in Orillia, but in this latter case not more than would be accounted for by the increase of population during the past year. The ratio of deaths to average population was 6.31 per cent., which is lower than it has been for some years.

The total number of deaths in each year since October 1st, 1871, with the annual per centage of mortality, based upon the *average* population, will be found in Table No. 2.

The causes of death, which will be found detailed in Table No. 11, are shewn to be all from ordinary diseases with two exceptions only, one "Choked by food" and another from fracture of the thigh bone. It is most gratifying to note that there were no deaths from suicide or violence of any kind.

Probational Discharges.

The number of patients who were allowed to return to their homes on probational leave, and the ultimate results thereof are shewn in the following table:—

——	Males.	Females.	Total.	Males.	Females.	Total.
Number to whom probational leave was granted	.....	.....	.....	82	81	163
Discharged, recovered	43	38	81	.....	.....	.....
" improved	10	8	18	.....	.....	.....
" unimproved	1	4	5	.....	.....	.....
Died before expiration of leave	4	1	5	.....	.....	.....
Returned to Asylum	12	19	31	.....	.....	.....
Still out on probation on 30th September, 1883	12	11	23	.....	.....	.....
				82	81	163

Assigned Causes of Insanity.

I have compiled from the returns of the various Asylums the table which follows, relative to the causes of Insanity in the cases of those persons who have become inmates of our institutions; not that it is believed that the table is of great value farther than to shew what the Superintendants have been able to gather under that head. The fact is that, notwithstanding all the efforts that are made to elicit information from the physicians and friends of patients, there are so many cases which come to us through the gaols, of whom little or nothing is known, and so much concealment and carelessness in other cases that it seems hopeless to expect to arrive at any point which will be of much value for statistical purposes.

CAUSES OF INSANITY, In respect of the admissions for the year ending 30th September, 1883.	NUMBER OF INSTANCES IN WHICH CAUSE WAS ASSIGNED.					
	As predisposing cause.			As exciting cause.		
MORAL.	Males.	Females.	Total.	Males.	Females.	Total.
Domestic troubles, including loss of relatives or friends				10	31	41
Religious excitement				6	11	17
Adverse circumstances, including business troubles				20	5	25
Love affairs, including seduction				2	6	8
Mental anxiety, "worry"				9	8	17
Fright and nervous shocks				3	2	5
PHYSICAL.						
Intemperance in drink	2		2	13	3	16
Intemperance, sexual					1	1
Veneral disease				1		1
Self-abuse, sexual				39	4	43
Over-work				9	4	13
Sunstroke	1		1	12	2	14
Accident or injury				6	3	9
Pregnancy					1	1
Puerperal					14	14
Lactation					1	1
Puberty and change of life		1	1		3	3
Uterine disorders					5	5
Brain disease, with general paralysis				2	1	3
Brain disease, with epilepsy				6	6	12
Other forms of brain disease				1	3	4
Other bodily diseases or disorders, including old age	1		1		8	8
Fevers				4	5	9
HEREDITARY.						
With other ascertained cause in combination	42	37	79			
With other combined cause not ascertained	30	37	67			
CONGENITAL.						
With other ascertained cause in combination	1	1	2			
With other combined cause not ascertained		2	2		1	1
Not insane				3		3
Unknown	121	126	247	92	98	190
Total	198	204	402	238	226	464

INCREASE OF INSANITY.

YEAR.	LUNATICS ADMITTED.	DISCHARGED, DIED AND ELOPED.	REMAINED.
1877	437	331	106
1878	479	335	144
1879	461	321	140
1880	507	353	154
1881	502	386	116
1882	493	401	92
1883	519	433	86

In previous reports attention has been called to the difficulty which existed in getting reliable information as to the increase, or otherwise, of insanity in the Province. It was pointed out that owing to the inadequacy of asylum accommodation in the Province, the full number of the known insane could never be brought under treatment, and that such fact prevented many from becoming known who would otherwise have applied for admission. Of late years this difficulty has been diminishing, and during the past year, although the asylums have been full, accommodation has been found within reasonable time for all applicants. In the above table there is shewn the admissions and discharges for the last seven years, together with the remainder in each year left on our hands. In this table the statistics of the Idiots are eliminated, it refers to the Insane alone. It will be seen that for four years past, while the number of insane admitted each year has not materially varied, there has been a steady decline in the number left as a remainder. May we not be gradually approaching the time when we shall have reached the point when admissions and discharges will balance each other?

We are still, as last year, without information as to the number of insane to be found amongst the general population of the counties, the returns of the census taken in 1881 not having been yet published.

Asylum Expenditure.

The following summary shows the gross expenditure for maintenance of the five Asylums during the past year, as well as the year which preceded it:—

—	1882.	1883.	Increase.
	$ c.	$ c.	$ c.
Asylum for the Insane, Toronto	91,811 08	93,492 17	1,681 09
" " London	129,336 74	130,175 69	838 95
" " Kingston	59,465 87	56,809 57	.....
" " Hamilton	67,301 70	68,289 46	987 76
" Idiots, Orillia	20,767 68	28,328 21	7,560 53
	368,683 07	377,095 10	11,068 33
Less decrease at Kingston Asylum	.....	.....	2,656 30
Actual increase	.....	.....	8,412 03

It will be seen that on the whole there has been an increase in Asylum Expenditure of $8,412 03, which has been almost entirely due to increased population. The largest increase is shewn by the Orillia Asylum, but that institution maintained an average of 233 patients in 1883 against 161 in 1882. Toronto Asylum shews the next largest increase, to account for which there

was an average of 678 patients in 1882, against an average of 703 in 1883. Next is the Hamilton Asylum, the average in that institution was 461 in 1882, and 537 in 1883. Kingston Asylum, on the other hand, shews a decrease in expenditure, although it also had a larger average of patients, viz. 430 in 1882, against 443 in 1883. This latter is to be accounted for, I think, by the fact that the heavy rains in the early part of the summer of 1883 almost entirely destroyed the productiveness of the farms and gardens in the west, while the damage from the same cause was comparatively little felt at Kingston. At the Hamilton Asylum farm the operations were an absolute failure. The land is heavy clay and not well drained, the consequence was that from the heavy rains it was impossible to do anything with the land in time to put in the usual crops.

The average weekly cost *per capita* in each Asylum is shewn in the following table :—

ASYLUMS.	1882.		1883.	
	Annual Cost per Patient.	Weekly Cost per Patient.	Annual Cost per Patient.	Weekly Cost per Patient.
	$ c.	$ c.	$ c.	$ c.
Asylum for the Insane, Toronto	135 41	2 60	132 99	2 55
" " London	145 15	2 79	145 12	2 79
" " Kingston	138 29	2 65	128 23	2 46
" " Hamilton	125 56	2 41	127 16	2 44
" Idiots, Orillia	128 99	2 48	121 57	2 33

A comparison of this table with that of last year will shew a decrease in cost of maintenance in three of the Asylums in the Province. In one there is no change, and in one there is a slight increase. Thus Kingston Asylum shews a reduction of 19 cents per week, as compared with the preceding year; Orillia Asylum, 15 cents; Toronto Asylum, 5 cents; London Asylum, no change; Hamilton Asylum shews an increase of 3 cents per week per patient.

These fluctuations are slight, and occur every year. They are due to changing causes, which sometimes affects one institution in a given year more than another. During the past year, for instance, unusually large expenditures have been made on maintenance account in the London and Hamilton Asylums for unavoidable repairs and alterations to buildings, which have had the effect of considerably increasing the average cost for the year.

Table No. 14 shews the expenditure in each Asylum under the various heads of the Estimates and the annual cost per patient under each head.

While on the subject of expenditure, it may not be out of place to call attention to the very low rate of expenditure which prevails in all our Asylums, compared with similar institutions in the United States. As I stated in my Report of last year, the lowest average I could find in the United States was $227.75 per annum per patient, while our average for the same period in Ontario was $134.68, a scale which one of our Superintendents characterizes as "nearly poor-house rates." Recent enquiries which I have made have suggested no reason to change these

figures relatively. A part of this larger cost in the States is due to larger salaries given to attendants and servants; but by far the larger part is due to the greater comforts which are afforded the patients in lodging, clothing and food, and especially the latter. The food given to our lunatics is abundant, of good quality, and all that is necessary for health, but it is plain and unattractive. There is an absence of variety and style in serving, which becomes extremely distasteful to many patients, as they frequently tell me, and which could be much improved if a little increased expenditure were permitted by the Government.

In Table No. 15 will be found a statement of the prices paid for supplies, which were under contract. The extent of Asylum purchases, and the amount expended under contract and by purchase in the open market, together with the amount paid in salaries and wages, are shewn in the following summary:—

1. Goods and supplies bought under the contract system	$93,194 94	
2. Cattle bought by Government buyers and slaughtered at Government slaughter-houses	54,519 16	
3. Services, etc., for which tenders could not be asked, such as Water, Gas, Repairs, Amusements, Stationery, etc.	47,493 46	
4. Dry Goods, Groceries, and supplies purchased in open market	77,831 78	
5. Salaries and Wages	104,055 76	
		$377,095 10

This sum of $377,095.10 represents the total expenditure for the maintenance of the five Asylums of the Province, but, to arrive at the net cost, there should be deducted the revenues received from paying patients, which amounted in the year just closed to $59,922.59, as shewn in the summary which follows:—

Revenue from Paying Patients.

	No. of Patients.	Revenue.
Asylum for the Insane, Toronto	274	$36,649 67
" " London	132	10,901 37
" " Kingston	48	3,989 79
" " Hamilton	56	6,456 96
" " Orillia	28	1,924 80
	538	$59,922 59

Deducting the above sum from the gross cost of the Asylums for maintenance, the net cost is found to be $317,172.51.

There has been, as the following table shews, an enormous increase in the past year in the amount of revenue collected from paying patients, arising from a better system of collection which has been adopted, and extensive collection of arrears of past years. The amount collected in each year, from 1871 to 1882 inclusive, is shewn hereunder:—

	No. of Patients.	Revenue.	Increase.	Decre
		$ c.	$ c.	$ c.
For the year ending September 30, 1871	118	14,045 30		
" " 1872	139	19,255 80	5,210 50	
" " 1873	171	16,660 61		2,595 19
" " 1874	182	20,035 77	3,375 15	
" " 1875	231	21,875 92	1,840 15	
" " 1876	256	21,175 93		699 99
" " 1877	323	28,093 58	6,917 65	
" " 1878	334	30,103 75	2,010 17	
" " 1879	343	32,898 26	2,794 51	
" 1880	387	37,653 81	4,755 55	
" " 1881	414	41,066 54	3,412 73	
" " 1882	475	43,937 64	2,871 10	
" " 1883	538	59,922 59	15,984 95	

Employment of Patients.

From the returns of the Medical Superintendants the following figures relative to the number of patients employed, are compiled:—

ASYLUM.	Average population.	Number of patients employed.	Number of days' work performed.	Percentage of patients employed.
Toronto Asylum	703	214	69,701	30.44
London Asylum	897	628	160,558	69.89
Kingston Asylum	443	223	57,244	50.33
Hamilton Asylum	537	335	69,740	62.38
Orillia Asylum	233	79	24,797	34.26
Total	2,813	1,479	382,040	52.57

It is shewn here that out of an average population of 2,813 no less than 1,479 are induced to do more or less work.

Every year we find that more and more importance is attached to employment as an important factor on the treatment of lunacy. It is gratifying, therefore, to find that this feature is assuming such large proportions in the Ontario Asylums, and that if the figures of last year and the previous year are

put into comparison, this feature is a rapidly growing one. In 1882, the returns shewed 42.67 per cent. of the whole number employed, while in 1883 the percentage reached 52.57. The returns of the separate institutions were as follows for the two years:

	1882.	1883.
Toronto Asylum.....	32.15	30.44
London "	54.00	69.89
Kingston "	45.11	50.33
Hamilton "	37.61	62.38
Orillia "	34.11	34.26

It should be borne in mind that in the Toronto Asylum there are a number of patients in the superior wards who are not of the class who are likely to be induced to engage in the ordinary work to be found about an Asylum. If these be deducted from the whole number of patients, the average of Toronto would be increased to 45.62 per cent., and the average of the whole to 63.09 per cent.

Insane Asylum Accommodation.

The fact that the annual expenditure for the care and treatment of the Insane is constantly increasing in this Province is one which demands the serious consideration of the Government and the Legislature.

What is to be done with the chronic or incurably insane is a question ever present in the minds of those who have to do with this class of the population. Statistics point undeniably to the conclusion that a very large proportion of the patients who are admitted into the Asylums are hopelessly incurable; and the question of how to accommodate the yearly residuum of this class, and, at the same time, afford proper accommodation and treatment for recent and probably curable cases is one the satisfactory solution of which would very largely regulate this item of public expenditure for many years to come.

The Government and the Legislature—unless this country is able to avoid the experience of older countries must soon decide upon a general and comprehensive policy with regard to the accommodation of the insane. As to the hopelessly insane, the question is not so much one of treatment as of care; and if modern alienists could determine, with anything like certainty, what lunatics admitted into our Asylums are curable and what are not, the problem would be nearly solved. An absolutely certain division of the patients admitted into our Asylums is, in fact, impossible; but such has been the progress made within the last few years in this branch of psychology that, throwing the benefit of the doubt in the safe direction, the population of the Asylums might be very fairly divided into two great classes—the possibly curable and the hopelessly insane. Supposing such a division made, what is the best plan of providing accommodation which shall at once supply custody and needful care to the one class, and proper treatment to the other? Shall we have one large hospital for curable cases, and apply the cottage plan to the others? Or would it be better to divide up the recent and probably curable cases among a number of moderately small institutions scattered throughout the Province, and collect the chronic insane in a few large and well appointed establishments, like our present Asylums.

Judging by the opinions of the most successful experts in the treatment of the insane, there can be little doubt as to which of these methods should be adopted. A bright, cheerful atmosphere and home-like surroundings, abundance of fresh air, exercise, employment and amusement are all-important agencies in

the recovery of the insane, and it is quite obvious that a maximum of these benefits can best and most cheaply be secured to each individual patient by continuing the present policy of the Government in the erection, as further asylum extension is required, of comparatively small institutions—cottages so called.

The first object in dealing with the insane should be to cure those who are curable; the second, to render the lives of those who are incurable as comfortable and happy as possible.

To my mind all these considerations point to the use of small-sized buildings as curative institutions for recent cases, while the incurable class, who form so large a portion of the insane population, might very well be cared for in the large establishments already existing, and which might be extended from time to time, as required, as above indicated.

While on my recent tour of inspection of American institutions, I gave special attention to the subject of asylum erection and extension, and I believe from what I then learned that the erection of monster asylum buildings has become a thing of the past, and that the asylum of the future will, as at Kankakee and Toledo, be entirely on the so-called cottage plan. That is to say, a central administration building, and a number of comparatively small detached buildings, or wards, which number can be indefinitely extended as occasion warrants, and which will afford a maximum of comfort and efficiency with a minimum of cost.

There is another feature of the subject to which I wish to refer: I believe I am not far wrong in stating that not less than one-third the population of our Asylums are people who could be discharged to-day, if not as sane, still as sufficiently so to be cared for safely at home, or in any refuge where a very slight degree of care and watchfulness is exercised. But these people cannot be sent out of our Asylums because they are without home or friends, and if put outside of the Asylum gates they would be left to die in the streets.

In Great Britain and in the United States, theoretically, there are no free patients in the Insane Asylums, except in those in which criminals are cared for. All the pauper insane come through the parish or county poor authorities, and are kept at the expense of the parish or county from which they came. Whenever such patients are in a condition to be discharged they are restored to the parish or county. With us pauper patients come through the gaols and by ordinary process as well; and we have no authority to return them whence they came. If their friends do not voluntarily come forward and take charge of them —and they seldom do—indigent-chronics once in the Asylum remain there for life and are buried at the expense of the Province. Besides it is becoming very much the fashion—just as in some townships the indigent poor are committed to the gaols as vagrants, and the load shifted from the township to the county—for the counties in their turn to avail themselves of the free quarters provided by the Province, by the simple process of passing old people, unable to care for themselves, and who are from their age in a condition of senile dementia but quite harmless and inoffensive, through the gaols into the Asylums. There, of course, they remain, so that by this simple, and to them inexpensive, process, the municipalities get rid of their paupers, who might otherwise cost them something for support.

Some four or five of the counties of this Province have Refuges, and for the most part take care of their demented poor; but these same counties have also to help in the care of the poor of the same class who get passed into the Provincial Asylums from other counties.

It is a well-established principle in Britain and the United States that each parish or county must pay for the support of its own poor, and if all the inmates of our Asylums who could safely be transferred to such establishments as county

Refuges, were so transferred we should not need additional asylum accommodation for a long time to come. Hence comes the question whether the Province shall continue to enlarge its Asylums year after year for want of the space occupied by this class of the unfortunate poor, or take such measures as will oblige the counties or other municipalities to assume the burthen of maintenance themselves.

In Britain most if not all county poor houses have their insane wards for mild cases; all who are able to work are kept busy, and as a consequence very little medical attendance is required, and small expense is incurred under that head.

Supposing it to be conceded that to each county belongs the duty of maintaining its own insane poor, the question will arise whether it is better for each county to undertake the duty itself or for the Government to perform it at the expense of the counties. I am of opinion that the work would be best done in government institutions. Wards for the chronic insane in county poor houses would be very small ones in this country, and the expense of keeping the necessary staff of attendants on such a small scale would, in the aggregate, amount to too great a sum. Again, even with incurables, their comfort and well-being require a degree of classification which would be impossible under such circumstances. For instance, the epileptics should be kept by themselves, and have special watching night and day; the noisy should be kept separate from the quiet, and so on. Hence, in an establishment provided on a large scale for the accommodation of the incurably insane, the work can be better and more cheaply done by the Government than by the counties. But the line should be drawn at the point where the patient cannot with safety to himself and others be cared for outside the walls of an asylum.

The proportion of chronic or presumably incurable cases to the whole number of admissions may best be judged by the table on page 9 shewing the increase of insanity.

As to the question of expense, the fact is that at present the incurably insane form a much larger portion of our insane population than those for whom there is a reasonable probability of recovery; and, of course, under the present system, in which the two classes are, to a large extent, grouped together in treatment, the cost *per capita* is very large, mainly because the heavier items of asylum expenditure, such as medical attendance and supervision, which should be charged almost exclusively against the curable class, are distributed over the total asylum population. Were the expenses of treatment confined wholly or largely to the curable class, the annual expenditure for asylum accommodation would be much reduced, especially if, in addition, the cottage plan were applied to the chronic class, as the accommodation could thereby be increased indefinitely, at comparatively little expense, as is now done in many institutions elsewhere.

In older countries another factor enters into the care and treatment of the insane, namely, private Asylums, which are mostly filled by the insane of the richer class; and though this, so far, is not a feature of our Canadian Asylum accommodation, it promises soon to become so.

The Homewood Retreat, a private Asylum at Guelph, which has lately been licensed for the reception of private patients under most favourable auspices, is more fully spoken of in another part of this Report.

It would be well, in my opinion, for the Government to encourage the establishment of these private institutions, as a means of lessening the public expenditure for the treatment of the insane. They would require of course to be under the strictest Governmental inspection, so that the charge sometimes brought

against the proprietors of such establishments, that they yield to the temptation of detaining their patients, instead of endeavouring to cure them, would be avoided, along with other abuses which would be liable to spring up without a rigid system of inspection.

The system of providing superior wards for the wealthier class of patients, would to some extent be superseded by the establishment of private asylums, and the way thus left clear for the adoption of a sound and far-reaching policy in the care and treatment of the non-paying insane.

That the State is under no more obligation to provide care and treatment for wealthy persons, or those able to pay, who are suffering from cerebral disease, than it is for those in the same condition of life, suffering from any other ailment (always excepting, of course, dangerous lunatics) is a settled principle in Great Britian, and even in the case of dangerous lunatics the cost of their care is made a legal charge upon relatives and friends.

Idiot Asylum Accommodation.

There has been very little change in the idiot population under public accommodation since the removal of all the patients of that class from the wards of the Hamilton Asylum, which had been set apart for them, to the Orillia Institution. At the close of the official year, 1882, the whole number of idiots confined in these two institutions was 234, divided as follows: in Hamilton Asylum, 75 (40 males and 35 females); in Orillia Asylum, 159 (80 males and 79 females). On the 30th September, 1882, these 234 idiots (120 males and 114 females) were all under accommodation at the Orillia Asylum. This number—the same, it will be noticed for the two years—represents exactly the measure of public accommodation available for this class of unfortunates, and no further admissions can be made, except to fill vacancies caused by the death or discharge of present inmates.

There are at present on file at the Orillia Asylum 109 applications for admission, many of them known to be urgent cases, and all of them must wait their turn for vacancies. I have given instructions to the Medical Superintendent that, in filling these vacancies, preference shall be given to girls of the age of puberty and upwards, owing to the liability of these unfortunates to seduction, and the consequent multiplication of the idiot class.

How long some of these applications may have to remain on file may be approximately judged by the rate at which vacancies have occurred in past years.

The vacancies created by deaths and discharges during the last five years have been as follows:—

1879	16
1880	19
1881	26
1882	32
1883	27

or an average of 24 vacanies per annum. At this rate it will be four years before the demand for accommodation will be overtaken, even supposing that no further applications be made within that period—a supposition, it is needless to say, most improbable of realization.

It is quite apparent that if the Legislature is to continue the policy which it has acted upon in the past, more room must at once be provided for this class of our population. The building at Orillia is not only ill-adapted, structurally,

to Asylum purposes, but it is old, and only kept in repair with the greatest difficulty. The Architect informs me that it will be but a short time when it will become entirely unfit for occupation, and that it is not worth repairing or adding to. And besides the original unfitness of the building for its purpose, and its present dilapidation, the Asylum lacks one feature of the first importance in any such institution, namely, the necessary quantity of arable land, there being, all told, only eleven acres attached to it. Deduct from that quantity what is occupied by the Asylum building, outhouses and yards, the ornamental grounds and the airing courts—all too small—and very little is left for cultivation.

As I have pointed out elsewhere, the auxiliary building is also eminently unfit for the purpose to which it is being applied. There are in it at present from 75 to 80 adult male patients, and the accommodation is barely enough for their custody. There being no grounds attached to the building except a small yard, employment or occupation of any kind is altogether out of the question. Besides, the building is situated on the main street of the village—a position most unsuitable for such an institution; it is heated by stoves and lighted by coal-oil lamps, incurring thereby great risk of fire, with consequences which in such an event could scarcely fail of being disastrous.

In my opinion these considerations all point to the urgent necessity which exists for building a suitable Asylum, of sufficient capacity to accommodate at least 500 idiots, and having in connection a farm of not less than 300 acres of good, arable land which would furnish ample employment to the inmates.

The returns made to me by the Medical Superintendent shew that with the limited facilities at his command he had had no less than 13,244 days' work performed by the male inmates, and 11,553 by the female inmates—there being but 79 patients of both sexes employed; but these results are as nothing compared with the possibilities of such an institution, if there was a proper farm attached to the Asylum, and we had in operation, what I hope soon to see, a systematic effort for the education of the inmates. At present these unfortunates are for the most part maundering away an objectless existence, while in similar institutions in other countries, provided with plenty of land and suitable workshops and other buildings, the otherwise cheerless existence of the inmates is brightened and their health improved by suitable mental and physical training, to say nothing of the material results in the direction of making the institutions themselves self-supporting.

The authorities of the New York State Asylum for Idiots, an institution which I visited recently, have purchased 300 acres of land, four miles from the Asylum building, at a cost of $200 an acre, and are erecting upon it what they call a farm house, as a place of residence for fifty inmates, from whose labour, under the management and superintendence of one man and his wife, it is anticipated a large profit will be realized in farm products.

To those who visit Idiot Asylums in the United States it will seem almost incredible that the clean, bright, active and useful people they will see about such institutions can have been developed out of such apparently unpromising material as the untrained idiot class. But such is the work which is being accomplished elsewhere with exactly the same class of people as are to be found idle and useless in Orillia Asylum, and such is the work which can be, and I hope soon will be performed here. Common humanity demands at least that the attempt should be made, for anything more utterly dreary and pitiable than the lives ordinarily led by this class of our population could scarcely appeal to human sympathy. With many of the insane there is at least a hope that some day they will be restored to their friends "clothed and in their right mind;" but with this other class there is absolutely no such hope. All that can be done is to ameliorate their

condition by kindness and attention to their limited requirements, mental and bodily. For, as has been clearly demonstrated by experience elsewhere, an idle and unemployed existence is in the highest degree incompatible with the measure of enjoyment and usefulness of which these people are capable, under proper methods of education and training. But if to these motives of humanity is added one which perhaps appeals more directly to the popular mind, namely, that of economy, the plea would seem to be unanswerable: and I feel quite confident that, apart of course from the capital expenditure, the work could be done at less annual expenditure than at present.

But if the Government cannot see its way at present to an immediate commencement of a new Institution for Idiots, with a suitable farm attached, I venture respectfully to suggest the expediency of providing without delay some further temporary accommodation for not less than 200 idiots, to relieve the present pressure, as well as that which is certain to come in the near future.

I insert here an extract from a recent Report of the Board of Trustees of the New York State Asylum for Idiots, as shewing something of the scope of their work and their opinion of the necessity of it.

THE PURCHASE OF A FARM FIVE MILES FROM THE ASYLUM.

"The desirableness of this new acquisition to the Asylum will be better understood by a brief statement of the general scope and purpose of institutions for idiots. There seems to be some misapprehension in the public mind upon this subject.

"As beneficiaries of the State, idiots may be divided into two classes. The one, constituting, perhaps, twenty-five per cent. of the total number are simply objects of a State's charity. They are incapable of any useful occupation. They are not only helpless, but they require a good deal of care, and this increasing as they grow older. Their infirmity is the result of an undeveloped brain, or of an organic disease of the brain. As such they need special care and management to obviate positive discomfort or suffering. They are not responsible for their condition, and so are the more entitled to sympathy and help. They are not a very numerous class, and, therefore, the cost of their public maintenance is quite moderate. Little more can be done for these than to improve their habits, thus adding to their comfort while diminishing the burden of their care.

"When present in indigent families they cripple the industrial energies of any family so afflicted. To such, a public refuge for their unfortunate ones affords an immense relief.

"When found in county poor-houses they are equally troublesome, and because of the trouble their care involves, they are often the victims of neglect or ill-treatment. Quite a large proportion of the inmates of our own institutions have been committed by the county superintendents of the poor. Doubtless the ratio of idiots is greater among the poor than among the rich or those in comfortable circumstances. At all events, on account of their infirmity, almost all the cases of idiocy occurring in indigent families become, sooner or later, a public charge. This is especially true of city populations

"If the class of cases above described were properly cared for in the county institutions, the cost of their maintenance and care would be little less than in a well-managed State institution. Their separation from others of the dependent classes does not increase the cost of their maintenance. This is seen in the fact that in the large aggregations of the dependent classes, in a great city like New York, such separation is made as a matter of convenience and economy. Under

such circumstances, the needs of this class—in fact of any class—can be better understood and be more easily and economically met.

"For this lower grade of the general class of idiots, systemitized efforts for the improvement of their habits is all important. This fact is now recognized by social scientists both in this country and in Europe.

"It should be added, perhaps, that the class in question is not a long-lived one; and furthermore, that society is rarely called upon to assume the burden of their support till they are seven or eight years old.

"But, by far the larger portion of the general number of idiots are of a different character. While on the one hand they approach in point of default of intelligence, such as have already been described, they are bounded on the other by persons of average human intelligence. Of these, taken together, it may be said of them, that they are capable of some useful employment, and of acquiring habits of industry after having an appropriate industrial training. This capacity for occupation not only diminishes, to a certain extent, the future cost of their maintenance, but it adds to their happiness. With them idleness is often irksomeness, if not resulting in disagreeable or destructive habits.

"The failure in the matter of capacity for any useful occupation is the result of their want of intelligence, of their want of control of their natural organs, and upon their want of will or disposition to exercise their natural faculties and powers. Special training is therefore needed to obviate these infirmities of theirs.

"Hence, in all institutions for the amelioration of the condition of idiots, schools have been organized. And this not because the inmates are expected to become qualified to get a living by their wits, but to give them command of the faculties they have; to teach them to observe what is going on about them, to heed and understand what is said to them, and to do what they are told to do.

"The casual visitor to an asylum may go away with the impression that the mental exercises are predominant. The term 'school' sometimes applied to such institutions may have fostered the idea. However, if an enquiry is made by such visitor, he will be told at once that such exercises are only means to an ultimate end; and that, to make the pupils capable of some employment. He will be told that all the mental training is subordinated and contributory to that main purpose. Even the amusements are made to subserve the same end.

"The various methods used to accomplish this result in our own establishment have been set forth, from time to time, in our annual reports. No one can visit the asylum thoroughly without seeing that these elementary methods of training and instruction have resulted in the development of a good deal of industrial capacity on the part of the pupils; and that they have acquired habits of industry. The older girls are rendering efficient service in the various departments of household work. In fact, as soon as she attains the proper age and strength, every girl is engaged, under an attendant teacher, in all kinds of house-work for a part of the day.

"A few facts will illustrate this statement. The number of inmates of the asylum is now nearly four hundred. Three paid employes, with the help of some of the older girls, do all the laundry work of the whole establishment.

"One woman, with similar assistance, does all the baking of the whole family. At least thirty girls can use the sewing machine with skill. Quite a number assist very intelligently in the care of the nursery cases.

"In the male department there is the same attention paid to industrial training, and with like results. Farming, gardening, care of grounds, work about the stable, and grading, furnishes occupation for all the older boys during eight months of the year, for either a whole or part of the day. During the winter recourse is had to the shops for the same purpose.

"So predominating is the practical training in our institution, that if the term 'school' were applied at all, it should be industrial school for idiots.

"Up to this time the institution has laboured under the disadvantage of not having land enough to employ the labour it could command. In this respect, it was like most of the other institutions of a similar character in this country.

"The new purchase will furnish the opportunity for the profitable employment of some forty of the older boys. A few of them have already been located there and with fair results from the summer's work, not only in the amount of products raised, but in the improvement of the farm.

"Unless the trustees are disappointed in their expectations, this addition to their means of supplying work to a portion of the inmates will result in some lessening of the general cost of management; that is to say, that a larger number can be supported with the usual appropriation."

Immediately following this portion of the Report will be found tables, numbering seventeen, giving full particulars respecting the places patients were admitted from, the time they had been insane prior to admissions, their previous occupation, the causes of death of those who died, etc. Copies of the inspection reports upon the respective asylums succeed these tables:

TABLE

Shewing the general movements and result of treatment of lunatics in
1st October, 1876, to the

YEAR.	Average number of patients resident.			Number of lunatics admitted each year.			Number of patients recovered in each year.			Number of patients discharged improved and unimproved each year.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1877.....	916	903	1819	243	194	437	82	70	152	26	29	55
1878.....	954	971	1925	252	227	479	92	65	157	28	31	59
1879	1010	1044	2054	231	230	461	71	64	135	42	27	69
1880..... ..	1086	1129	2215	257	250	507	53	61	114	32	54	86
1881.....	1164	1190	2354	270	232	502	84	82	166	33	38	71
Average of Five Years.	**1026**	**1047.4**	**2073.4**	**250.6**	**226.6**	**477.2**	**76.4**	**68.4**	**144.8**	**32 2**	**35.8**	**68**
1882.....	1219	1238	2457	251	242	493	73	86	159	20	46	66
1883.....	1280	1300	2580	253	266	519	94	80	174	36	54	90

No. 2.

the Asylums of the Province during each of the seven years from the 30th September, 1883.

Number of patients who died in each year.			Percentage of recoveries upon admissions.			Percentage of deaths upon number resident.			Number of lunatics remaining in Asylums at the end of each year.		
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
67	48	115	33.74	36.08	34.78	7.31	5.31	6.32	926	933	1859
64	50	114	36.82	28.63	32.77	6.70	5.14	5.92	989	1014	2003
62	49	111	30.73	27.82	29.28	6.13	4.69	5.40	1039	1104	2143
69	73	142	20.62	24.40	22.48	6.35	6.46	6.41	1133	1165	2298
86	58	144	31.11	35.34	33.06	7.38	4.87	6.11	1199	1217	2416
69.6	**55.6**	**125.2**	**30.60**	**30.45**	**30.47**	**6.77**	**5.29**	**6.03**	**1057.2**	**1086.6**	**2143.8**
99	67	166	29.08	35.38	32.25	8.12	5.41	6.75	1249	1259	2508
92	71	163	37.15	30.07	33.52	7.18	5.46	6.31	1274	1320	2594

TABLE No. 3.

Shewing the Counties from which patients were admitted to Asylums during the year, and the Asylums they were assigned to.

Name of county or place from which insane persons were sent to Asylums for the year ending the 30th September, 1883.	Number received from gaols under warrant of Lieut.-Governor.	Number received from private families by medical certificates.	Total number received from the respective counties into Asylums during the year.	Assigned to Toronto Asylum.	Assigned to London Asylum.	Assigned to Kingston Asylum.	Assigned to Hamilton Asylum.	Assigned to Orillia Asylum.
Algoma District	1	2	3	3	....	....	.....	.....
Brant	8	6	14	.....	.....	.....	14	.....
Bruce	1	9	10	3	7	.....	.....	.....
Carleton	16	6	22	3	.....	18	....	1
Dufferin	2	.... ..	2	....	....	.....	2	..
Elgin	4	6	10	.....	9	.....	1	.....
Essex	5	3	8	.. ...	8	....	.....	.....
Frontenac	8	14	22	.....	.....	22	.....	.....
Grey	4	7	11	8	.....	.....	3	....
Haldimand	2	4	6	.....	.....	.....	5	1
Halton	4	7	11	1	....	.....	9	1
Hastings	8	3	11	7	.....	3	.....	1
Huron	2	10	12	.. ..	12	.....	.....	.....
Kent	1	13	14	.....	13	.....	.....	1
Lambton	11	13	24	1	22	. ..	.....	1
Lanark	10	2	12	... ..	1	10	.....	1
Leeds and Grenville	6	6	12	2	.....	10	.....	.....
Lennox and Addington	7	3	10	1	.....	8	.....	1
Lincoln	6	3	9	.....	.....	.....	9	.....
Middlesex	8	34	42	1	40	.....	.....	1
Muskoka District	1	3	4	2	.....	.....	.....	2
Norfolk	5	6	11	.....	.....	.....	11	.....
Northumberland and Durham	8	13	21	16	.....	.....	4	1
Ontario	2	7	9	7	.....	.....	.....	2
Oxford	6	11	17	1	13	.....	2	1
Peel	.....	9	9	7	.....	.....	2	.....
Perth	4	12	16	.....	16	.....	.....	.....
Peterborough	5	4	9	5	.....	.....	4	.....
Prescott and Russell	2	1	3	.....	.....	3	.....	.....
Prince Edward	.....	1	1	.....	... ..	.....	.....	1
Renfrew	3	3	6	1	.....	4	.....	1
Simcoe	17	18	35	5	.....	.....	28	2
Stormont, Dundas and Glengarry	10	2	12	.....	.....	12	.....	.....
Victoria	6	2	8	5	....	.....	2	1
Waterloo	2	8	10	2	.....	.....	7	1
Welland	3	4	7	2	.....	.....	5	. ...
Wellington	16	15	31	1	3	.....	27	....
Wentworth	18	17	35	3	.....	.. ..	31	1
York	35	44	79	71	.....	... ..	6	2
Not classed	4	6	10	4	1	4	1	....
Total admissions, including 55 transfers.	261	337	598	162	145	94	173	24

TABLE No. 4.

Shewing the Counties from which the entire number of patients that have been admitted to Asylums have been received, as well as the admissions of the present year.

COUNTIES.	Admissions of the year.	Total Admissions.
Algoma District	3	17
Brant	14	214
Bruce	10	157
Carleton	22	299
Dufferin	2	2
Elgin	10	211
Essex	8	143
Frontenac	22	433
Grey	11	217
Haldimand	6	143
Halton	11	185
Hastings	11	205
Huron	12	312
Kent	14	205
Lambton	24	267
Lanark	12	209
Leeds and Grenville	12	228
Lennox and Addington	10	133
Lincoln	9	263
Middlesex	42	639
Muskoka District	4	10
Norfolk	11	144
Northumberland and Durham	21	531
Ontario	9	316
Oxford	17	259
Peel	9	227
Perth	16	245
Peterborough	9	155
Prescott and Russell	3	70
Prince Edward	1	91
Renfrew	6	64
Simcoe	35	377
Stormont, Dundas and Glengarry	12	260
Victoria	8	136
Waterloo	10	191
Welland	7	139
Wellington	31	353
Wentworth	35	640
York	79	2,027
Not classed	10	329
Total admissions, including transfers	598	11,046

TABLE No. 5.

Shewing the length of time the patients received into the Asylums during the year had been insane prior to their admission, including transfers.

DURATION OF INSANITY PRIOR TO ADMISSION.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Total.
Under 1 month	56	39	29	40	164
From 1 to 2 months	23	17	5	21	66
" 2 " 3 "	11	10	6	14	41
" 3 " 4 "	13	8	5	7	33
" 4 " 5 "	6	9	..	8	23
" 5 " 6 "	4	4	4	6	18
" 6 " 7 "	5	4	2	8	19
" 7 " 8 "	4	1	1	2	8
" 8 " 9 "	2	1	..	1	4
" 9 " 10 "	3	2	3	1	9
" 10 " 11 "	2	1	3	3	9
" 11 " 12 "	2	1	1	1	5
" 12 " 18 "	5	6	5	14	30
" 18 months to 2 years	3	1	1	2	7
" 2 " 3 years	5	8	3	7	23
" 3 " 4 "	4	7	3	5	19
" 4 " 5 "	3	5	4	1	13
" 5 " 6 "	5	3	2	7	17
" 6 " 7 "	..	..	2	2	4
" 7 " 8 "	..	1	3	3	7
" 8 " 9 "	..	1	2	..	3
" 9 " 10 "	..	1	2	..	3
" 10 " 15 "	..	5	2	4	11
" 15 " 20 "	1	1	2	2	6
20 years and upwards	2	3	4	..	9
Not insane	3	..	..	..	3
Unknown	..	6	..	14	20
Idiots	..	..	..	..	24
Totals	162	145	94	173	598

TABLE No. 6.

Shewing the length of residence of patients remaining in the Asylums on the 30th September, 1883.

LENGTH OF RESIDENCE.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Orillia Asylum.	Totals.
Under 1 month	9	5	6	4	1	25
From 1 to 2 months	9	11	7	7	1	35
" 2 " 3 "	9	13	3	8	3	36
" 3 " 4 "	11	10	7	5	1	34
" 4 " 5 "	9	12	6	15	2	44
" 5 " 6 "	8	10	5	15	3	41
" 6 " 7 "	5	6	7	3	2	23
" 7 " 8 "	11	7	4	8	1	31
" 8 " 9 "	6	4	4	18	2	34
" 9 " 10 "	5	9	3	12	1	30
" 10 " 11 "	7	14	5	12	2	40
" 11 " 12 "	8	6	5	51	1	71
" 12 " 18 "	41	39	20	13	75	188
" 18 months to 2 years	15	33	22	18	2	90
" 2 to 3 years	26	72	35	70	10	213
" 3 " 4 "	29	64	31	85	14	223
" 4 " 5 "	27	53	36	66	10	192
" 5 " 6 "	63	55	34	5	15	172
" 6 " 7 "	47	37	21	8	49	162
" 7 " 8 "	71	32	11	124	36	274
" 8 " 9 "	24	43	9	..	..	76
" 9 " 10 "	23	39	9	..	..	71
" 10 " 15 "	77	117	114	..	..	308
" 15 " 20 "	52	39	24	..	..	115
" 20 years and upwards	111	165	21	..	..	297
Totals	703	895	449	547	231	2825

TABLE No. 7.

Shewing the periods that patients were under treatment who were discharged cured during the year.

PERIODS UNDER TREATMENT.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Total.
Under 1 month	6	..	..	1	7
From 1 to 2 months	6	1	2	..	9
" 2 " 3 "	7	3	1	4	15
" 3 " 4 "	10	5	5	1	21
" 4 " 5 "	6	5	2	2	15
" 5 " 6 "	7	6	2	4	19
" 6 " 7 "	6	4	3	4	17
" 7 " 8 "	3	5	2	2	12
" 8 " 9 "	5	..	1	2	8
" 9 " 10 "	1	..	2	2	5
" 10 " 11 "	..	1	..	4	5
" 11 " 12 "	2	2	..	1	5
" 12 " 18 "	2	7	2	6	17
" 18 months to 2 years	2	1	1	2	6
" 2 to 3 years	..	3	..	2	5
" 3 " 4 "	1	..	1	2	4
" 4 " 5 "	1	1	1	1	4
Totals	65	44	25	40	174

TABLE 8.

Shewing the periods that patients were under treatment who werei dscharged improved during the year.

PERIODS UNDER TREATMENT.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Total.
Under 1 month	..	1	1	..	2
From 1 to 2 months	..	..	..	..	.
" 2 " 3 "	2	..	1	..	3
" 3 " 4 "	2	..	1	..	3
" 4 " 5 "	3	1	2	1	7
" 5 " 6 "	..	1	..	..	1
" 6 " 7 "	..	1	..	..	1
" 7 " 8 "	..	3	1	..	4
" 8 " 9 "	..	..	..	..	..
" 9 " 10 "	1	1	..	..	2
" 10 " 11 "	1	..	1	1	3
" 11 " 12 "	1	1	..	..	2
" 12 " 18 "	1	..	1	..	2
" 18 months to 2 years	..	3	2	..	5
" 2 to 3 years	..	3	3	3	9
" 3 " 4 "	..	2	..	1	3
" 4 " 5 "	..	1	..	..	1
" 5 " 6 "	..	..	2	..	2
" 6 " 7 "	..	..	..	..	..
" 7 " 8 "	..	..	..	..	..
" 8 " 9 "	..	..	..	..	..
" 9 " 10 "	..	..	1	..	1
" 10 " 15 "	..	1	..	..	1
Totals	11	19	16	6	52

TABLE No. 9.

Shewing the periods that patients were under treatment who were discharged unimproved during the year.

PERIODS UNDER TREATMENT.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Orillia Asylum.	Total.
Under 1 month	1	..	1	..	..	2
From 1 to 2 months	2	1	..	..	1	4
" 2 " 3 "	3	1	..	1	1	6
" 3 " 4 "	3	2	1	..	..	6
" 4 " 5 "	..	2	..	..	1	3
" 5 " 6 "	1	1	..	2	..	4
" 6 " 7 "	..	1	..	..	1	2
" 7 " 8 "	1	1	..	..	..	2
" 8 " 9 "	..	..	..	..	..	..
" 9 " 10 "	..	..	..	..	..	..
" 10 " 11 "	..	..	..	..	..	.
" 11 " 12 "	1	..	..	..	..	1
" 12 " 18 "	1	1	..	1	..	3
" 18 months to 2 years	1	..	..	..	..	1
" 2 to 3 years	..	..	1	..	1	2
" 3 " 4 "	1	..	..	..	..	1
" 4 " 5 "	..	..	1	1	..	2
" 5 " 6 "	..	1	..	..	..	1
" 6 " 7 "	..	..	..	..	..	..
" 7 " 8 "	1	..	..	..	..	1
Not insane	2	..	..	..	..	2
Totals	18	11	4	5	5	43

TABLE No. 10.

Shewing the length of asylum residence of the patients who died during the year.

LENGTH OF RESIDENCE.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Orillia Asylum.	Total.
Under 1 month	2	3	5	4	1	15
From 1 to 2 months	1	5	1	1	1	9
" 2 " 3 "	..	1	1	2	..	4
" 3 " 4 "	1	1	4	1	..	7
" 4 " 5 "	..	1	..	..	2	3
" 5 " 6 "	2	1	..	2	1	6
" 6 " 7 "	4	2	1	..	..	7
" 7 " 8 "	..	3	1	..	1	5
" 8 " 9 "	1	..	..	..	..	1
" 9 " 10 "	1	..	..	1	..	2
" 10 " 11 "	1	1	..	..	..	2
" 11 " 12 "	..	1	..	1	..	2
" 12 " 18 "	3	4	4	6	..	17
" 18 months to 2 years	..	4	3	1	..	8
" 2 to 3 years	4	5	1	5	1	16
" 3 " 4 "	1	2	2	3	1	9
" 4 " 5 "	2	2	3	..	3	10
" 5 " 6 "	3	5	5	..	2	15
" 6 " 7 "	2	..	..	4	7	13
" 7 " 8 "	3	2	..	1	..	6
" 8 " 9 "	1	1	..	..	..	2
" 9 " 10 "	2	1	2	..	..	5
" 10 " 15 "	4	10	1	..	..	15
" 15 " 20 "	..	..	1	..	..	1
" 20 years and upwards	1	..	2	..	..	3
Totals	39	55	37	32	20	183

TABLE No. 11.

Shewing the causes of death of those who died during the year.

CAUSES OF DEATH.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Orillia Asylum.	Total
Apoplexy		4	1			5
Ascites			2			2
Biliary calculi					1	1
Brain, concussion of		1				1
Brain, softening of		1			1	2
Brain, tumour of		1				1
Bronchitis		1			1	2
Cardiac Disease				2		2
Caries		1				1
Cerebritis	1					1
Choked by food				1		1
Chorea			1			1
Chronic mania	1					1
Congestion of lungs					1	1
Debility, general			1	6	4	11
Diarrhœa	1	4	2	1		8
Dropsy				1	2	3
Dysentery	1		1			2
Epilepsy	5	7	2	1	3	18
Fever, enteric					1	1
Fracture of femur		1				1
Gangrene		1				1
Heart clot		3				3
Heart disease	4	2				6
Lupus exedens		1				1
Mania, exhaustion of	1	1		3		5
Marasmus	5	3	3	3		14
Paralysis	1	4	1	4	1	11
Paresis, general	1	2	6		1	10
Phthisis	9	5	8	4	2	28
Pneumonia		1	1			2
Senile decay, exhaustion and old age	9	10	7	6	2	34
Senile gangrene		1				1
Septicœmia			1			1
Totals	39	55	37	32	20	183

TABLE No. 12.

Shewing trades, callings and occupations of patients admitted into the Asylums during the year, and of the total number admitted.

TRADES, CALLINGS, AND OCCUPATIONS.	Admissions of the year.	Total Admissions.
Agents	2	6
Architects		1
Book-keepers	3	22
Bakers	2	20
Bricklayers		10
Butchers		24
Blacksmiths	4	75
Brassfinishers	1	2
Brewers	1	13
Builders		4
Barbers	1	9
Broommakers	1	3
Barristers		3
Brickmakers		3
Bridge-tenders		1
Brakesmen		2
Brushmakers	1	1
Baggagemen	1	1
Commercial travellers	1	10
Cabinet-makers		6
Consuls		1
Confectioners		6
Coopers	1	25
Carpenters	11	231
Clerks	8	175
Clergymen	1	32
Carriage-makers	1	4
Cooks		9
Carders		3
Captains of steamboats		3
Cigarmakers		6
Custom-house officers	2	5
Coppersmiths		1
Civil servants		1
Clock cleaners		1
Carters	2	3
Dyers		1
Domestic servants, all kinds	53	1506
Dressmakers	6	26
Detectives		1
Druggists	1	16
Doctors	3	16
Engineers	2	27
Editors		3
Farmers	111	1736
Fishermen	2	6
Founders		1
Ferrymen		2
Furriers		1
Gardeners		15
Grocers	2	7
Glassblowers		2
Gentlemen		23
Glovemakers		1
Gunsmiths		1
Hucksters		1
Carried forward	224	4114

TABLE No. 12.—*Continued.*

Shewing the trades, callings, and occupations of patients admitted into the Asylums, etc.

TRADES, CALLINGS, AND OCCUPATIONS.	Admissions of the year.	Total Admissions.
Brought forward	224	4114
Hatters		1
Hostlers	1	5
Hunters		1
Harness-makers	2	17
Housekeepers	100	1793
Hackdrivers		2
Innkeepers	1	13
Ironmongers		1
Jewellers		10
Janitors		1
Labourers	91	1438
Laundresses		3
Ladies	12	42
Lawyers	1	18
Lumbermen		2
Lathers	1	1
Milliners	1	33
Masons		52
Machinists	5	34
Matchmakers		1
Millers	1	36
Moulders	1	22
Merchants	5	119
Mechanics	2	39
Music-teachers	2	5
Marble-cutters		2
No occupation	36	398
Night-watchman		1
Nurses		7
Organ-builders		1
Professors of music		10
Plasterers		3
Pensioners		5
Photographers		11
Prostitutes		7
Painters	2	57
Printers	2	33
Peddlers	4	24
Physicians		9
Pumpmakers		2
Private secretary	1	1
Railway foremen		3
Railway conductors		1
Railway employés	2	2
Spinsters	9	118
Sailors		45
Students	4	35
Spinners	1	8
Sisters of Charity	1	2
Soda-water manufacturers		1
Stonecutters		3
Showmen		2
Saddlers		6
Shoemakers	4	138
Carried forward	516	8738

TABLE No. 12.—*Concluded.*

Shewing the trades, callings, and occupations of patients admitted into the Asylums, etc.

TRADES, CALLINGS, AND OCCUPATIONS.	Admission of the year.	Total Admissions.
Brought forward	516	8738
Seamstresses	1	138
Soapmakers		
Slaters		1
Station-masters		2
Soldiers		17
Salesmen	1	1
Surveyors		2
Sail and tentmakers	1	2
Shopkeepers		3
Shipbuilders		2
Teachers	9	162
Tinsmiths	3	20
Tavern-keepers		8
Tailors	6	108
Tanners	1	7
Teamsters		5
Tollgate-keepers	1	2
Vinegar-makers	1	1
Watchmakers	2	6
Woodworkers		2
Weavers	1	23
Wheelwrights	1	2
Waggon-makers		5
Waiters		1
Unknown or other employments, and idiots	54	1788
Totals	598	11046

TABLE No. 13.

Shewing detailed expenditure of the various Asylums, for the year ending 30th September, 1883.

DETAILS.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Orillia Asylum.
	$ c.	$ c.	$ c.	$ c.	$ c.
Medicines	493 29	371 00	263 79	197 46	56 71
Medical Comforts and Appliances	116 09	128 85	84 78	55 35	8 25
Butchers' Meat	16496 23	20485 26	9374 06	8163 61	2828 72
Poultry, Fish, etc	905 84	1195 84	509 03	751 54	163 24
Flour, Bread, etc.	7597 68	9369 30	3927 59	4836 96	2635 62
Butter	4481 28	6129 90	2369 10	3813 32	1098 39
Barley, Rice, Peas and Meal	1000 58	1231 05	646 86	1312 02	218 12
Tea	1255 30	2019 69	643 10	1134 78	248 34
Coffee	292 00	638 69	734 26	418 08	181 28
Cheese	467 68	690 94	26 05	547 41	8 18
Eggs	528 09	374 79	113 35	91 56	74 40
Fruit (dried)	702 85	1089 87	194 67	2130 76	36 50
Tobacco and Pipes	106 96	762 01	225 09	331 69	38 82
Salt, Pepper, Mustard, Vinegar and Pickles	211 85	382 94	157 13	206 40	47 55
Sugar and Syrup	3439 07	4694 69	1531 92	2187 00	553 00
Unenumerated Groceries	363 97	294 50	89 53	.....	47 14
Fruit and Vegetables	495 03	899 17	404 36	1873 49	568 08
Bedding	1823 70	3168 83	778 50	1259 51	495 45
Straw for Bedding	247 50	88 74	.....	228 89	151 49
Clothing	2670 49	8885 92	1652 58	1686 51	1098 55
Shoes	370 20	1541 04	286 23	928 45	818 83
Coal	7588 61	14106 86	7478 08	6540 83	1176 21
Wood	1649 44	2011 91	685 00	485 48	2221 42
Gas	2215 60	2559 45	500 00	2223 69	251 36
Oil and Candles	152 47	268 62	267 01	19 13	103 73
Matches	3 50	45 50	5 10	8 75	9 37
Brushes, Brooms and Mops	342 99	391 97	145 20	198 21	64 11
Bathbricks, Blacklead and Blacking	5 83	88 55	17 90	18 92	2 20
Soap and Laundry Expenses	1214 71	1042 50	728 19	852 70	434 93
Water Supply	2346 29	.....	.....	1209 72	.....
Advertising and Printing	538 63	163 55	190 55	198 35	62 65
Postage, Telegraph and Express Charges	166 46	384 50	201 25	202 47	44 94
Stationery and Library	435 57	505 04	181 98	227 67	97 25
Furniture, renewals and repairs	606 12	1568 90	609 83	304 46	239 63
Iron and Tinware	155 15	376 43	32 15	199 53	20 70
Crockery and Glassware	315 44	680 30	260 05	200 82	55 11
Feed and Fodder	1495 40	938 57	696 11	1852 77	338 22
Farm Labour, Stock, Implements and Repairs thereto	988 87	1399 82	445 94	192 13	117 67
Repairs Ordinary, to Buildings, etc.	951 31	3245 50	890 65	2529 58	364 44
Hardware, etc.	114 60	497 05	544 54	406 85	57 55
Paints and Oils	214 64	1061 56	255 71	500 32	46 85
Legal Expenses	.....	2 44	.....	.....	.....
Ice	106 00	64 00	.....	137 35	30 00
Officers' Travelling Expenses	110 00	125 90	126 80	119 35	176 70
Elopers, Expenses of Recovering	14 29	71 25	68 43	16 85	21 87
Freight and Duties	15 36	46 94	6 94	13 22	18 75
Amusements	202 31	345 47	105 90	111 34	19 84
Religious Instruction	150 00	83 50	12 00	.....	.....
Interments	67 00	275 00	98 00	120 50	139 50
Rent	.....	482 97	.....	463 05	1144 16
Incidentals	170 88	93 79	98 14	25 00	10 00
Removal of Patients	39 20	83 40	58 50	122 73	117 42
Salaries and Wages	27049 82	32721 43	18087 64	16632 90	9563 97
Totals	93492 17	130175 69	56809 57	68289 46	28328 21

TABLE No. 14.

Shewing the expenditure in each Asylum under the various headings of the estimates, and the annual cost per patient under such heading.

HEADINGS OF ESTATES.	Toronto Asylum.		London Asylum.		Kingston Asylum.		Hamilton Asylum.		Orillia Asylum.	
	Expended under headings of estimates.	Cost per patient.	Expended under headings of estimates.	Cost per patient.	Expended under headings of estimates.	Cost per patient.	Expended under headings of estimates.	Cost per patient.	Expended under headings of estimates.	Cost per patient.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Medicine and medical comforts	609 38	87	499 85	56	348 57	78	252 81	47	64 96	28
Butchers' meat, fish, poultry, etc	17402 07	24 75	21681 10	24 17	9883 09	22 31	8915 15	16 60	2991 96	12 84
Flour, bread, etc	7597 68	10 81	9369 30	10 44	3927 59	8 87	4836 96	9 01	2635 62	11 31
Butter	4181 28	6 38	6129 90	6 83	2369 10	5 35	3813 32	7 10	1098 39	4 71
Groceries	8368 35	11 90	12179 17	13 58	4361 96	9 84	8359 70	15 57	1453 33	6 24
Fruit and vegetables	495 03	71	899 17	1 01	404 36	92	1873 49	3 49	568 08	2 44
Bedding, clothing and shoes	5111 89	7 27	13684 53	15 26	2717 31	6 13	4103 36	7 64	2565 32	11 01
Fuel	9238 05	13 14	16118 77	17 97	8163 08	18 43	7026 31	13 08	3397 63	14 58
Gas, oil, etc	2374 57	3 37	2873 57	3 20	772 11	1 74	2251 57	4 20	364 46	1 56
Laundry, soap and cleaning	1563 53	2 22	1523 02	1 70	891 29	2 01	1069 83	2 00	501 24	2 15
Furniture and furnishings	1076 71	1 53	2625 63	2 93	902 03	2 03	704 81	1 31	315 44	1 35
Farm, garden, feed and fodder	2484 27	3 53	2338 39	2 60	1142 05	2 58	2044 90	3 80	445 89	1 96
Repairs and alterations	1280 55	1 82	4801 11	5 35	882 30	1 99	3110 13	5 79	468 84	2 01
Printing, postage and stationery	1140 66	1 62	1053 69	1 17	573 78	1 30	628 49	1 17	204 84	88
Miscellaneous	875 01	1 24	1674 66	1 87	1383 31	3 12	1456 01	2 71	1678 24	7 20
Water supply	2346 29	3 34	.....	.....	.....	.....	1209 72	2 25	.....	.....
Salaries and wages	27049 82	38 49	32721 43	36 48	18087 64	40 83	16632 90	30 97	9563 97	41 05
Totals	93492 17	132 99	130175 69	145 12	56809 57	128 23	68289 46	127 16	28328 21	121 57

TABLE No. 15.

Shewing the supplies for which tenders were invited, and the prices paid for the same under contract.

SUPPLIES.	TORONTO ASYLUM.	LONDON ASYLUM.	KINGSTON ASYLUM.	HAMILTON ASYLUM.	ORILLIA ASYLUM.
	$ c.	$ c.	$ c.	$ c.	$ c.
Butchers' Meat, per cwt					7 50
Flour, Fall Wheat, per bbl	4 75	4 97	4 95	4 97	4 75
Flour, Spring Wheat, per bbl	4 75	4 97	4 95	4 97	4 75
Bread, per 4 lb. loaf					0 08½
Oatmeal, per bbl	5 25	5 25		5 45	5 50
Cornmeal, per bbl		5 00			3 50
Split Peas, per bbl	4 75	5 00		5 40	
Pot Barley, per bbl	5 75				
Butter, roll and dairy, per lb	0 20	0 18¾	0 18½	0 22	0 18
Prime Mess Pork, per bbl		20 00			
Hams, per lb		0 14			
Bacon, per lb		0 12½			
FUEL.					
Hard Coal, Egg size, per ton	5 33	6 40	5 24		
" Chestnut size, per ton		6 62		6 12	
" Stove size, per ton	5 65			6 12	6 95
Soft Coal, for steam, per ton	4 60	4 97	4 45	4 65	
" grates, "				4 85	
Hardwood, per cord, green	4 75	4 50			3 08
" " dry		4 65	5 00	6 00	3 14

TABLE No. 16.

Shewing the number of officers and *Employés* in each and all of the Asylums, classified according to the duties performed.

OCCUPATION.	Toronto Asylum.	London Asylum.	Kingston Asylum.	Hamilton Asylum.	Orillia Asylum.	Total.
Medical Superintendents	1	1	1	1	1	5
Assistant Medical Superintendents	1	1	1	1	.....	4
Assistant Medical Officers	1	2	.....	1	.....	4
Bursars and Clerks	2	2	1	1	1	7
Storekeepers and Assistants	2	2	1	1	.....	6
Stewards	1	.....	1	.....	.....	2
Matrons	1	1	1	1	1	5
Assistant Matrons	1	2	1	.....	.....	4
Engineers and Assistants, and Stokers	5	7	3	4	2	21
Masons and Bricklayers	1	1	.....	.....	.....	2
Carpenters	2	2	1	1	1	7
Painters	1	1	1	.....	.....	3
Bakers and Assistant Bakers	2	2	1	1	.....	6
Gardeners and Assistant Gardeners	2	2	2	.....	1	7
Farmers and Farm Labourers	3	3	1	2	.....	9
Tailors and Seamstresses	2	4	1	2	2	11
Stable and Stockkeepers	.....	2	.....	1	1	4
Butchers and Jobbers	.....	1	1	1	.....	3
Messengers, Porters, and Porteresses	1	2	1	1	.....	5
Cooks and Kitchenmaids	7	5	2	4	4	22
Laundresses and Assistants	5	5	2	3	2	17
Housemaids	2	9	2	1	6	20
Dairymaids	1	1	1	.....	.....	3
ATTENDANTS.						
Chief Male Attendants	7	9	.....	1	1	18
Chief Female Attendants	6	6	.....	1	1	14
Ordinary Male Attendants	17	23	16	15	5	76
Ordinary Female Attendants	19	26	12	16	4	77
Male Night Watches	3	3	2	2	2	12
Female Night Watches	3	3	2	2	1	11
Total	99	128	58	64	36	385

TABLE No. 17.

Shewing the nature of the employment, the number of patients who worked, the number of days' work done by patients and the average work in days per patient during the year.

Nature of Employment.	Toronto Asylum.			London Asylum.			Kingston Asylum.			Hamilton Asylum.			Orillia Asylum.			Grand Total.		
	No. of Patients who worked.	No. of days worked.	Average per Patient.	No. of Patients who worked.	No. of days worked.	Average per Patient.	No. of Patients who worked.	No. of days worked.	Average per Patient.	No. of Patients who worked.	No. of days worked.	Average per Patient.	No. of Patients who worked.	No. of days worked.	Average per Patient.	No. of Patients who worked.	No. of days worked.	Average per Patient.
Carpenter's Shop	2	398	199	10	2495	249	3	429	143	4	481	120	1	156	156	20	3959	197
Tailor's Shop	4	805	201	5	1275	255	4	950	237	2	325	162	.....	.....	.....	15	3355	223
Shoemaker's Shop	.....	.....	.....	2	485	247	2	617	308	.....	.....	.....	.....	.....	.....	4	1102	275
Engineer's Shop	3	939	313	4	1182	295	6	1609	268	5	1195	239	1	313	313	19	5238	275
Blacksmith's Shop	.....	.....	.....	.....	.....	.....	2	350	175	.....	.....	.....	.....	.....	.....	2	350	175
Mason Work	2	302	151	5	1024	204	1	300	300	.....	.....	.....	.....	.....	.....	8	1626	203
Cane Work	.....	.....	.....	2	200	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	200	100
Repairing Roads	2	480	240	.....	.....	.....	.....	.....	.....	20	659	32	.....	.....	.....	22	1139	51
Quarrying Stone	.....	.....	.....	.....	.....	.....	.....	.....	.....	29	1607	55	.....	.....	.....	29	1607	55
Woodyard and Coalshed	6	1878	313	5	1261	252	4	850	212	20	3032	151	12	3756	313	47	10777	229
Bakery	2	730	365	2	650	325	2	313	156	2	335	167	.....	.....	.....	8	2028	253
Laundry	9	2557	284	14	4454	318	9	2137	237	18	5426	301	4	1252	313	54	15826	293
Dairy	5	1672	328	3	770	256	4	727	181	4	1460	365	.....	.....	.....	15	4599	306
Butcher's Shop and Slaughter House	3	873	291	4	1329	332	3	582	194	1	312	312	.....	.....	.....	11	3096	281
Piggery	2	626	313	.....	.....	.....	3	583	194	2	730	365	.....	.....	.....	7	1939	277
Painting	3	930	310	5	1184	236	3	713	237	4	809	202	.....	.....	.....	15	3636	242
Farm	20	6260	313	30	6043	201	15	4695	313	10	558	55	.....	.....	.....	75	17556	234
Garden	4	1252	313	26	6119	235	8	2340	292	20	1646	82	3	420	140	61	11777	193
Grounds	4	1252	313	.....	.....	.....	.....	.....	.....	18	1083	60	2	312	156	24	2647	110
Stable	4	1460	365	2	576	288	3	582	194	1	365	365	1	365	365	11	3348	304
Kitchen	9	3287	365	26	8163	313	5	1217	243	11	3912	355	5	1700	340	56	18279	326
Dinning-rooms	28	10220	365	24	8749	364	27	6876	328	16	5468	343	8	1878	236	103	33191	322
Officer's quarters	4	1460	365	.....	.....	.....	2	429	214	.....	.....	.....	1	365	365	7	2254	322
Sewing-rooms	12	3756	313	55	11139	202	14	3445	246	12	4134	344	3	930	310	96	23404	241
Knitting	14	4382	313	151	33468	223	20	4301	215	20	6087	304	.....	.....	.....	205	48238	235
Spinning	1	261	261	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	261	261
Mending	15	4695	313	31	6303	203	12	1576	131	7	2332	333	.....	.....	.....	65	14906	229
Wards and Halls	50	18250	365	148	46839	316	55	16900	307	81	20623	254	28	10220	365	362	112832	311
Storeroom	2	626	313	1	103	103	1	304	304	7	2085	297	.....	.....	.....	11	3118	283
General	4	380	95	73	16747	229	15	4417	294	21	5076	241	10	3130	313	123	29750	241
Totals	214	69701	325	628	160558	255	223	57244	256	335	69740	208	79	24797	313	1479	382040	258

INSPECTIONS.

Minutes of Inspections.

The first Inspection of the current year was made at the Kingston Asylum, which I visited on the 25th–27th January. The primary cause of my visit was to arrange for the location of the new gas works. A building which had been erected for the generator and purifier, having been found to be unsuitable for the kind of works which it was at last decided to erect, a change was proposed by the local architect. He proposed to erect the new works in one end of the coalhouse, and by the erection of a stone wall to isolate the works from the rest of the building.

This plan, when submitted to me upon paper, did not approve itself to my judgment, hence my visit to Kingston to confer with the contractors and all concerned upon the subject.

After a lengthed conference with the Medical Superintendent, the contractor, and the Manager of the Kingston Gas Works, I decided that the building originally constructed for the gas works, and which by some alterations could be made to answer the purpose, should be used, and that no change from the original plan should take place. The alterations required will be simply the raising the roof of the building about eight feet, and this will not cost more, perhaps not as much as it would to build the stone wall proposed across the whole house.

The gas works will thus be isolated from every other part of the Asylum buildings, and if an accident by fire should occur, the damage will be confined to the gas works alone. Under the change which was proposed, the works would have been under the same roof as the rest of the rear buildings, and the risk from fire in case of accident would be very greatly increased.

A recommendation will be made to the Public Works Department to make the alterations indicated.

During my visit I made inspection of all parts of the Asylum building.

I found that the new ventilators erected over the upper wards were in a leaky condition. The attention of the Public Works Department will be called to this.

The old, ventilating shafts of the upper wards have not yet been removed. Their removal is necessary to the completion of these wards. A recommendation will be made to that effect. When these old shafts are removed these upper wards will be, for brightness and cheerfulness, second to none in the Asylum.

In passing through the wards I found everything in excellent condition. The heating appliances of this Asylum are most efficient. Although on one of the days when I was present at the Asylum the thermometer outside stood at ten degrees below zero, every ward in the building was well heated and comfortable. No complaints were made by the patients, nor was there any appearance on their part that they felt the cold at all.

On the day I visited the wards one man was found in bed in a dying condition from an incurable disease, and one woman was confined to bed by reason of a slight ailment. All the other patients appeared to be in good health.

The ventilation, even during the extremely cold weather, when it was necessary to keep every door and window closed, was excellent. I detected no bad smells in any part of the building.

The movements of the patients in this Asylum since the beginning of the official year, 1st October, 1882, have been as follows :—

In residence at the above date, 223 males, 214 females, total 437. Since admitted, 18 males ; 12 females, total 30.

Discharged recovered, five males; seven females, total twelve.

Discharged improved, five males; four females, total nine.

Discharged unimproved, one male.

Died, five males; three females, total eight.

Leaving a total population on the register of 437.

Two patients were out on probation, thus reducing the actual number in residence to 223 males; 212 females, total 435.

The Restraint Register since the 1st October, 1882, shewed that there had been 161 instances in which restraint had been used. The number of patients to whom it had been applied was 24, 8 males and 16 females.

The methods in which restraint was employed are as follows:—

Seclusion.—One male, 3 times; ten females, 24 times in all.

Muffs.—Six males, 63 times in all; and four females 39 times in all.

Wristlets.—One male, 16 times; and two females, 16 times in all.

Chemical restraint is used to some extent in this Asylum, but no record of it as such is kept.

The Case books in this Asylum are excellently kept; a complete history of any case is to be found without trouble to anyone seeking it.

The Medical Superintendent informs me that the steam apparatus is not working quite satisfactorily this winter as compared with former years. Whether this is attributable to the quality of coal furnished, or to the imperfect construction of the furnaces erected for the consumption of hard coal last summer, has not yet been settled satisfactorily. But it is evident that nothing can be done now in the way of remedy until the heating season is over, when an effort will be made to cure the existing defects.

On the 22nd May, while on a visit to this Asylum, the Medical Superintendent reported to me that during the winter and spring there had been many cases of typhoid fever, and a great many cases of persistent diarrhœa in the wards of the Asylum. Among those who contracted the fever were two female attendants, one of whom died from the disease.

In company with the Medical Superintendent and the Engineer, I made diligent search for the cause of this sickness, and thought we had discovered it, when some defective ventilation was found on the female side of the institution. I immediately ordered that to be remedied, which was done, but the looked for improvement in the health of the institution did not follow.

Further investigation was made by the Medical Superintendent, and he finally reported that, in his opinion, the water used in the Asylum was the cause of the trouble. Before making this report he had, on his own account, a sample of the water analyzed, the report of the analyst being that the water was unfit for use.

Upon receiving this information, I instructed Dr. Metcalf to forward a sample of the water to me, and upon receiving it I sent it to Dr. Ellis, public analyst of this city. Later on, in order that the test might be as thorough as I could get it, I instructed Dr. Metcalf to filter some of the water through sand, and forward two samples—one filtered and the other unfiltered. These samples I sent to Mr. Hayes, another public analyst of this city. The following are the reports of Dr. Ellis and Mr. Hayes, respectively:—

Dr. ELLIS' REPORT.

Toronto, 28th June, 1883.

Sir,—The analysis of the water marked A. I. K., which you sent, is as follows:

Free ammonia	·0042	grs.	per gal.
Albumenoid do.	·0042	"	"
Oxygen absorbed in four hours	·112	"	"
" " fifteen minutes	·047	"	"
Chlorine as chlorides	·024	"	"
Total solid matter dry at 212° F.	9·0	"	"
Comparative degree of organic impurity	·375	"	"

The water contains some suspended matter which consists of the ordinary microscopic organisms inhabiting lakes and rivers.

As a drinking water I should class the sample in the second class or "Suspicious Water."

The above analysis leads me to think that the water in question is the water of Lake Ontario (or of the St. Lawrence River) which has been exposed to pollution in some way (not, I should say, from sewage) or has been stored in a cistern or reservoir so as to become "stagnant," as it is called. If this is the case and the source of pollution can be discovered and remedied, I have no doubt the water will be perfectly wholesome.

The amount of oxygen absorbed is at present much too high, pointing to the presence of decomposable vegetable matter from some source.

If you can tell me any particulars as to the source of the water and any other circumstances bearing on the case, I shall be in a better position to express an opinion on the matter of the wholesomeness or otherwise of the water in question. As it is I should consider the water a dangerous one to use.

I have the honour to be, sir, your obedient servant,

(Sd.) W. H. Ellis.

Mr. HAYES' REPORT.

Ontario School of Chemistry and Pharmacy,

116 King Street West, Toronto,

15th August, 1883.

Dear Sir,—I have made a careful analysis of water received from you by messenger, and find a considerable difference between samples marked No. 1 and No. 2. No. 1, may be termed a first-class water and contains nothing of an injurious character, except a little vegetable matter, which would be easily removed by filtering, and, in fact, corresponds very closely to the water supplied to the city here. But sample of water marked No. 2, when the whole analysis and microscopic examination is taken into consideration would appear to be of a doubtful character. The large amount of albumenoid ammonia, and nitrites, with the increased amount of chlorine is a bad feature, and when viewed in connection with the microscopic examination of the sediment, shows it to be of a very doubtful character, and should on no account be used for drinking purposes without thorough filteration; even then I should have some doubts as to its fitness for use.

I append the complete analysis :—

	No. 1.	No. 2.
Colour	Pale yellow.	Pale yellow.
Odour at 100	None	None
Total solids	9.5 per gal.	7.5 per gal.
Chlorine	.3 " "	.4 " "
Free ammonia	.00175 " "	.0007 " "
Albumenoid ammonia	.00187 " "	.0053 " "
Oxygen in 15 minutes	.014 " "	.028 " "
Oxygen in 4 hours	.030 " "	.048 " "
Nitrites	.032 " "	.048 " "
Phosphate	Present	Much more than No. 1.

Microscopic examination :—

No. 1—Conferva, animalcula and diatarues.
No. 2—Animalcula rodlike, bactend, conferva and spores in large amount.

I remain,

Yours faithfully,

(Signed) Thos. Hayes,

Analytical and Consulting Chemist.

From these reports it appeared, *first*, that the water used at the Asylum is impure and unsafe for use in its natural condition; *second*, that the danger in it consists in suspended impurities which can be removed by proper filtration.

Having arrived at this point the Medical Superintendent was instructed to make enquiries in the United States and Canada as to the best system of filtration in use. He did so, and submitted the information obtained, and after a full consideration of the whole subject the filter which seemed to me to promise the best results is a "sand filter," manufactured by the "Newark Filtering Company, of Newark, N. J." I at once placed myself in communication with that Company, and subsequently visited Newark and made a thorough investigation of their system, and the results it has produced in various localities. The conclusion I arrived at was that the filter manufactured by this company will, so far as I am able to judge, meet all the requirements of the Kingston asylum.

Upon reporting my conclusions to the Government I received authority to give an order to the company to place a filter in the Kingston asylum in full working order and ample for the work required, the acceptance of the filter to be subject to its performing the work in a satisfactory manner.

I should add here, as a matter of public interest, that the water used at the asylum is taken from the bay in front of the institution, and derives its impurities from the Bay of Quinte, and the little Cataraqui Creek, which empties into the bay a short distance west of the institution.

I made another inspection of the Kingston asylum on the 24th of July, and following days. On that date the register shewed a total population resident of 436, viz., 222 males and 214 females. Of these there were found to be employed at some sort of work, ninety-nine males and eighty-one females. The works carried on here are the ordinary employments to be found in and about the asylum, farm work, stable work, gardening, tailoring, dressmaking, shoemaking, and the domestic occupations incident to the institution. Indeed, however desirable it may be to keep patients employed, it would be difficult to find employment for more than

are at work at present in this asylum. Everything that is used in the institution, in the way of clothing, boots, shoes and slippers, socks and stockings, are made there, the single article for patients' wear which has to be bought is that of mens' caps, and it is all done without the employment of any paid labour, except one tailor. The clothing for the females, all head wear, socks and stockings are made under the supervision of the matron, and in the wards entirely. There is no sempstress nor sewing room. The tailor necessarily has a shop to work in, and there is one large sewing machine there for heavy work. All the rest of the work, for both sexes, is done by hand, there is not another sewing machine in the institution.

An inspection of the restraint register shewed that, since the last inspection, six months ago, only one patient, a female, had been under mechanical restraint. She was restrained for four consecutive days in March. The form of restraint used was muffs. Two males and fifteen females have been secluded during the same period, aggregating fifty-five instances. This is a gratifying improvement on the record of the previous four months, as shewn by the notes of previous inspection.

The medical superintendant is making a special effort to reduce restraint to the lowest possible point, and, as the result shews, with much success. He informs me that hyocymene is used to some extent as a curative agent, and to cut short paroxysms in cases where restraint was previously used, but it is not used continuously in any case, not more than three or four consecutive doses are given in any one paroxysm.

Another inspection of this Asylum was made on the 21st, 22nd and 23rd September. I made on this occasion an examination of the works on the new cottage now approaching completion. It is hoped that we shall be able to open it about the latter end of December. On the recommendation of the Medical Superintendent, I have asked the Public Works Department to make some changes on the verandas on the south side, these changes have been completed, and will afford very spacious means of taking the air and sun on cold days in winter, without too much exposure. On this occasion I had the patients mustered, and saw, and spoke with each one separately, in his or her day room or dormitory, or wherever the patient happened to be engaged in work or amusement; one patient only was found in bed, this was an epileptic man who had recently suffered a succession of attacks of his malady. One patient a female was found in seclusion. All the other patients were going about their usual occupations in good physical health, well clothed and shewing all the signs of being well cared for in all respects.

Asylum for the Insane, Toronto.

I visited this Asylum on the 26th February, with the special object of ascertaining what structural repairs and alterations were necessary, with a view to the disbursement of the amount appropriated by the Legislature for that purpose.

I made in company with the Medical Superintendent, a thorough examination of the whole of the main building, and found the following works to be necessary.

Ward No. 3. The closets and bathroom in ward No. 3, to be wainscoted from the floor upwards four and one-half feet. The associated dormitory to be new floored with pine, and the floor in the sittingroom to be renewed with hardwood. Three bedrooms in this ward also require new floors.

Ward No. 4. Bathroom to be wainscoted with pine, and refloored with

hardwood. North dining-room, centre of floor to be relaid with pine. North-West associated dormitory to be relaid with pine. Between doors both sides to be refloored. One bedroom also requires repairs to centre of floor.

Ward No. 5. Bathroom and water-closet to be ceiled and wainscoted with pine. Small bedroom floor to be repaired and painted.

Ward No. 6. Bathroom to be wainscoted. Floor between doors on both sides to be repaired. New pine floor in South East dormitory, the same in North East dormitory.

Ward No. 7. North and south sitting-rooms to have new floors of hardwood.

Ward No. 8. North associated dormitory to be new floored with pine. Hall floor to be renewed with hardwood. West sitting-room new hardwood floor. Closet floor to be repaired. Wainscoting in bathroom to be completed. Between doors floor both sides to be repaired. South dining-room new pine floor. South associated dormitory new pine floor. The estimated quantity of lumber required for the above works is as follows:

7,600 feet hardwood flooring.
12,000 " pine "
1,300 " " sheeting.

There will also be required for general purposes 1,000 feet two inch dressed pine, 1,000 feet one and one-half inch dressed pine, and 1,000 feet one inch dressed pine lumber.

The roof of the main building was reported to be in a leaking condition in some places. There were also leaks at the south chimney of the west wing and the south transepts. The attention of the Public Works department will be called to these.

The heating in the main building is done on an old and very imperfect system, by which it is impossible in cold weather to raise the temperature of the wards to a point high enough for perfect comfort for the patients. On the occasion of this visit I found this to be the case in a marked degree. None of the patients seemed to be warm enough, in fact, I found the temperature much too low for my own comfort when in active exercise. Nothing is more urgently needed in this institution than an improved heating system. At present there are something like thirty boilers distributed throughout the basements, to do the work which might be done with two or three properly placed in a Central Boiler House in the rear of the Asylum, for which there is plenty of room.

The drying-room attached to the laundry was found to require some improvements, eight headers ten feet long each, to cost $20 each, is needed to improve the heating. In the ironing-room a new heater is much needed, the one in use being very imperfect as well extravagant as to fuel.

The buildings throughout were found to be in their usual condition of cleanliness and good order.

On inspecting the stores I found that there were in stock some lines of dry goods which were not being used; and the same to a small extent in groceries and hardware. It is necessary that so far as possible all these goods should be worked off before new purchases are made, and the Bursar was instructed accordingly.

The following is Mr. Christie's report of two inspections made during the year:—

An inspection was begun by me on the morning of the 28th July and continued on subsequent days, during which I visited all the different parts of the

Asylum, saw all the patients, enquired into the management, and noted the wants which were seen to be necessary for its proper maintenance.

At the close of the last official year on the 30th September, there were 700 patients in the Asylum, of which 346 were males and 354 females. Between that date and the 30th July there have been admitted 73 males and 71 females, making a total of 844 patients (419 males and 425 females) who have been under treatment in the Asylum within the period named. Out of their number there have been discharged 34 males and 50 females; and transferred 14 males and 12 females; 10 males and 17 females have died, and one male has escaped. Thus leaving in residence on the 30th July a population of 706, namely, 360 males and 346 females.

Of the persons discharged 38 had recovered, 8 had improved in their mental health, 16 were taken home by their friends in an improved state, and 2 were sent out of the Asylum in an unimproved state.

At the time the new branch of the Idiot Asylum at Orillia was opened, and the idiots then in the Hamilton Asylum were removed, the vacancies which were made in Hamilton were partly filled by the removal of 13 male and 12 female patients from Toronto. As these belonged originally to the Hamilton district they were transferred to the Asylum there so that vacancies might be created in the Toronto Asylum for the accommodation of lunatics in the district attached to it.

One man was also transferred to the Central Prison, from which place he had been received, as he was, before the expiration of his sentence, discovered to be not insane, and was therefore returned in order that he might work out his term of imprisonment.

The general health of the patients was found to be good, and the means and arrangements for their mental and physical well-being such as to warrant the conviction that they are in possession of as great a measure of comfort as their condition will admit.

The more refractory patients on the female side are domiciled in Ward No. 7, and at the time of my visit were largely assembled in the two sitting-rooms belonging to this ward. Some of them were noisy and excited, but I found that no personal restraint was employed; and an examination of the Restraint Book showed that none had been resorted to since the 6th January last.

Moleskin mitts were only worn by three of the patients who were destructive and dirty. The others were all wearing ordinary clothing.

On visiting the corresponding ward on the male side in which the refractory patients are kept, I also found that no personal restraint was employed, and that none had been resorted to for the past seven years. At the time of my visit 42 out of the 64 occupants of this ward were outside taking exercise, and 11 of them were at work on the farm.

Much, no doubt, is accomplished for the mental benefit of the patients by furnishing them with cheerful surroundings, such as bright wards, home-like and comfortably furnished apartments, together with proper entertainments and amusements consisting of concerts, parties, picnics, drives, etc. Pure air, cleanliness, and a strict regard to the sanitary condition of such institutions are equally essential to the well being of the patients, and the absence of all kinds of irritation which might result from the indiscretion of attendants, or bad classification, and unnecessary restraint are equally to be avoided.

However essential medical care and treatment may be, it would be largely imperative without the auxiliaries to health referred to.

The associated system prevailing in this Asylum commends itself in respect to the close supervision which can be maintained over suicidal patients. As the

proper classification of inmates in the different wards is most carefully made, it is obvious that the care of the patients in each of the dormitories and dining-rooms in the different wards can be very satisfactorily provided for, and as evidence of this, only one case of suicide has taken place in this Asylum in the last eight years.

In all the free wards there are two dining-rooms, one of which is used by the more tractable, and the other is reserved for the more refractory patients. Each dining-room is also furnished with a separate table for the more suicidal patients who are not allowed the use of knives and forks, but are fed by attendants. Immediately after each meal and before the doors are unlocked through which the patients leave the rooms, the knives and forks are counted so as to prevent the possibility of any of them being secured by stealth.

On different days during my visit I took occasion to see the food, in course of preparation, and also after it was served, and in each case I found it to be well prepared, and good quality, of sufficient variety, and neatly served.

The single bedrooms are at present all occupied, but the large majority of patients sleep in the associated dormitories, in six of which there are 18 beds, a number of which, when the area of the dormitories is taken into account, could be materially reduced with benefit to the patients.

The number of wards in the main building is eight, four extending on each side to the west and east of the main entrance, and in rear of the principal offices and officers' quarters which are centrally situated in the main building. The male wards are to the west, and are designated by the even numbers 2, 4, 6, 8; while the female wards to the east are numbered 1, 3, 5, 7, and this arrangement follows to the other eight wards situated in the wings which project to the south from the angle of the main building, and are numbered respectively 10, 12, 14, 16, and 9, 11, 13, 15. Cottages "A" and "B," containing 121 female patients, are situated to the south and east of the main structure, adjoining the female side, and Cottage "C," which completes a list of the divisions, is situated on the west side, and at present is occupied bp fifty male patients.

A thorough examination of the different wards, and each apartment in them showed that they were in neat order and kept scrupulously clean. Some considerable repairs, however, will shortly have to be made to the flooring, some of which I understand has been laid for twenty years, and requires renewal. There are eleven apartments more urgently requiring reflooring or repairs, namely, one sitting-room, and two bedrooms in No. 3 ward. In No. 5 one sitting-room. No. 7 one sitting-room and one bedroom. In No. 4 two dormitory floors and No. 8 two dormitory floors, and the chapel floor and the entrance thereto, for all of which an appropriation will be sought for sufficient material with which to make the necessary repairs.

I also note that the roof of cottage "A" requires repairs, as well as that of the main building near the north and west angles.—The ceilings of the connections between the wings and main building, which are plastered, and to some extent exposed to the weather, also require to have the remaining plaster removed and relaid with pine sheeting. This latter work can be done by the carpenter so soon as he is at liberty to attend to it.

One of the hot water boilers after long service has become so much worn as to be unfit for use, consequently the Public Works Department will be communicated with as to having it replaced with a new one at the earliest possible date.

The reconstruction of the coal and wood sheds, for which appropriation was made, has been completed and the painting also to the extent of the appropriation is in an advanced state.

The farm and grounds, stables and outbuildings connected with the Asylum

were also visited. The farm is well cultivated, and the outbuildings are kept in good order. The crops promise well, and the products not only materially help to provide for the maintenance of the institution, but the cultivation of the farm also furnishes suitable employment for a large number of more or less convalescent patients who are physically and mentally benefited by the necessary work and exercise which it affords. The cows, twenty-six in number, are fed under cover, largely attended to by patients, and at present supply from sixty to seventy-five gallons of milk per day, which is an ample quantity for the wants of the inmates of the institution.

An inspection of this institution was made by me on the 14th and 15th of November. On the 28th of July, the date of my previous visit, there were in residence 706 patients, 360 males and 346 females. Since that date up to the 14th 31 have been admitted, twelve males and 19 females, making the total number under treatment 737. 372 males, 365 females.

From the former date there have been discharged four males and nine females, and eight males and seven females have died, leaving 360 males and 349 females, or a total of 709 patients in residence on the morning of the 13th.

One female is now out on probation, and one male eloped and is not yet recovered; both of them are included as remaining in residence. Of those discharged nine had recovered and four were improved in their mental condition. During the days of my visit the roll call of the institution was checked, and with the exception of the two who were absent, all the patients were seen. Their general condition was highly satisfactory, three males and four females only were confined to bed in consequence of indisposition. No case of personal restraint in any of the wards, either on the male or female side, existed, but little noise could be heard and no disturbance or excitement, to any extent, took place during the two days of my visit. The tidiness of the dress and general appearance of the institution indicated a measure of quiet and comfort which was very satisfactory. Although a number who were conversed with complained of their confinement and the injustice of it, under circumstances such as theirs, with a superabundance of wealth for their maintenance in their own hous s, but no complaint was made in regard to their treatment in the Asylum.

The different wards and all the apartments in each were in excellent order, and those which have recently been painted present a very neat appearance. The colours chosen are chaste and the work has been well done and adds greatly to the cheerful appearance and comfort in the halls and rooms in which the work has been finished.

After minute investigation in regard to the wants of the institution, it is obvious that some articles of furniture and furnishings are immediately required to maintain the measure of appearance and comfort which is necessary in some of the superior paying wards. The worn and dilapidated condition of the carpets in some cases renders them unfit for further service, particularly those in the sitting-rooms in pay wards number 12, 15 and 16. After consultation with the Superintendent it has been decided both on the score of economy and cleanliness to re-lay those floors with linoleum, which will, no doubt, prove more lasting under the constant wear to which it is subjected, and the cleanliness of it is also a factor in choosing it for the purpose.

It is also desirable, as soon as possible, to replace with new material the matting which has been removed from the principal stairway, as well as the oil-cloths at the landings, as then it would lessen the noise and add to the comfort of the patients in the adjoining wards.

The material heretofore in use for shirting for free patients has during the summer season been cotton and in the winter woollen. The Superintendent re-

commends the use of wincey as a measure of economy and comfort to the patients during both seasons. As the appropriations are sufficient for the purchase of those articles, the Superintendent in conjunction with the Bursar will attend to their selection.

The boiler now in use for cooking purposes has been in service for 19 or 20 years, and although apparently sufficiently strong, yet the constant wear for such a length of time would suggest the propriety of replacing it at an early day, and as some time would necessarily be consumed in adjusting a new one, besides the time which would be taken in making it, a recommendation to provide for the purchase of another in the estimates for the coming year will be made, as serious results would follow if this one were to give out before another was ready for use

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Hamilton Asylum.

I made no less than thirteen visits to the Hamilton Asylum during the year. This large number of visits arose out of the extensive works which were going on at this place during the summer, and the absence of the Medical Superintendent for four months on sick leave. During Dr. Wallace's absence his place was ably filled by the Senior Assistant Superintendent in the service, Dr. Lett, from the Toronto Asylum. Dr. Wallace returned in August from his trip across the Atlantic, much benefited by the journey, but not restored to health. He has, however, continued to improve since his return, and at this writing (Dec.) he appears in excellent health and is rapidly regaining the strength he lost by nearly a year's illness.

The following are some extracts from the minutes of my several visits commencing with the 2nd March:—

The movements of the population since the 1st of October last have been as follows:—In residence on the 1st of October 464; since admitted 106; total under treatment 570; discharged 18; died 12; eloped one; leaving the population on the books at this date 539, of whom three patients are out on probation, making the total number of patients in the house 536; an increase of 73 in resident population since the beginning of the official year. Of the 18 discharged there were recovered 13, improved three, unimproved two. One of the latter was transferred to the Toronto Asylum. This leaves 10 vacant beds in the Asylum at this date, all of which are on the male side. I went through, and thoroughly inspected, all the wards, they were all exceptionally clean and neat, and in the whole Asylum I only saw one excited patient, and that one was a female. There was not a case of restraint or seclusion, and the Medical Superintendent informed me that there had been none for some months. The sewing-room in the Asylum is well supplied with workers from amongst the patients. There were about 25 busily at work on the day of my visit.

In the winter season there is scarcely any employment for the male patients beyond the ordinary work of the house to be found. A few are breaking stones in the quarry. These, with the exception of the patients that are employed in the barns, stables and engine-houses, etc., are all that are employed.

The painting of the interior of the building is progressing very favourably; only a few rooms remain to be completed. When completed this Asylum will present an exceptionally bright and cheerful appearance. The chief reason for my visit on this occasion was to select sites for the two new cottages which are to be commenced this year, the new laundry and drying-room, and to arrange for a reconstruction of the water closets connected with the wards.

The sites selected for the cottages are immediately in the rear of the airing courts on the east and west side. One of the cottages will face to the eastward and the other to the westward, and both will be within easy reach of the kitchens and offices of the main Asylum, whence the supplies of cooked food will be drawn.

The water and gas supply will also be parts of the system of the main Asylum. Each cottage will be heated with its own heating apparatus.

A new laundry and drying-room will be erected immediately in the rear of the present laundry, filling up the space between the building as it now stands and the coal sheds. The old laundry will be converted into a kitchen, and when completed will afford a large and commodious one for the use of the whole establishment. The old kitchen will be used as a scullery and storeroom.

The Medical Superintendent is authorized to make requisition upon the Bursar for furniture and furnishings for the cottage and for certain wants which were specified, to the extent of $900. He is also authorized to purchase for his own house, certain articles of furniture to the extent of $100.

The new water tanks in the yards which were constructed last year, are found to be leaky and incapable of holding the quantity of water they ought to hold. The attention of the Public Works Department will be called to this, and also to the fact that the deck roof of the front building continued to be in a leaky condition, hereby causing a great deal of inconvenience to the inmates, as well as destruction to the plaster of the ceilings.

The very full condition of the female side of the Asylum, rendered some further means of accommodation for female patients necessary, in order that many females should not, after being duly certified, remain in the gaols. Instructions were therefore given for the Bursar to vacate the house occupied by him, and which was built for him, so that it could be made available for female patients. Accordingly the Bursar found lodgings in the city, and nineteen quiet chronic patients in charge of two attendants, were quartered in his house. It is only intended that this arrangement shall be temporary, and will cease when the new cottage is completed.

On the 17th September, I called the roll and saw all the patients. The total population on that day was 550 as the register shewed, but as there were three patients at home on probation, the actual resident population was 547, viz.: 246 males and 301 Females.

On this occasion there were no patients in bed on the male side, all being up and about and in apparent good health. On the female side there were six patients found in bed, one was an aged paralytic, one a case of general paresis, three cases far gone in consumption, and one who had been somewhat bruised by a fall. She was not seriously hurt, but preferred remaining in bed.

There were no cases of restraint or seclusion on the day I called the muster roll.

The patients were generally quiet and free from excitement, and their appearance, so far as health and cleanliness were concerned, was satisfactory, and the condition of the Asylum in all its departments was in the highest degree commendable, cleanliness and order being everywhere prevalent.

The construction of the new laundry and drying-room, and the removal of the kitchen, will involve considerable changes and consequent expenditures. A more powerful engine will be required to drive the laundry machinery, and with the present and prospective increase in the number of patients, the kitchen range now so much too small as to render a supplementary stove necessary, will have to be increased to double its present size. The government will be asked to sanction these expenditures when the works are so far advanced as to require them.

London Asylum.

My first inspection of this Asylum began to-day (March 6th) and lasted three days. This visit had a peculiar interest for me from the fact of my having in January last, authorized the Medical Superintendent to make a commencement upon a new system, by the employment of female attendants in the male wards. I was anxious to see how far the two months' experience of the one woman who had been employed seemed to justify a continuance of the experiment. The results which came under my observation appeared to me to give every promise of the future success of the system. The person employed holds the temporary rank of deputy chief-attendant. Her duties at present extend over the whole of the male side of the main Asylum, which contains about 260 patients. In this part of the Asylum there is a fair average class of patients, neither the worst nor the best are to be found here. The quietest of the patients are in the cottages, those most afflicted are in what is called the Refractory Branch, so that the patients in this part of the Asylum are what may be said to be the middle class belonging to the institution. Since this lady's coming to the Asylum, a greater tidiness in person, a greater activity in employment, and a general brightening of the condition of those in the male wards is perceptible. I observed more people at work, knitting and rag mat-making have been introduced, and other employments will follow. In these two occupations just named, some thirty or forty patients now find employment, and the indications are that in respect of knitting, the Asylum will in future be supplied with all the socks and mits required, and probably something over. But it is evident that to do the work which is required of female attendants in this part of the Asylum, one such female is not enough. I have, therefore, authorized the Medical Superintendent to extend his operations in this direction by employing two more females when he is able to find those who would be suitable, and I hope for the most favorable results from the new system. The men seem to appreciate very highly the privilege afforded them of having a lady amongst them, and no single instance in the two months that this lady has been in the Asylum has occurred of attempted violence, or even rudeness towards her. The Medical Superintendent is determined on his part to leave nothing undone which will promote the health and comfort of his patients, and on my part I am only too happy to second, so far as lies in my power, all his efforts. Shoemaking has been introduced into the wards, and is progressing very favourably. Cane-seating is about to be commenced, and I have authorized the purchase of the necessary supplies for both these employments. I have also made enquiries as to the growth of willows for basketmaking, and have arranged to have forwarded to the Asylum at the proper season for planting, a sufficient number of willow cuttings to plant two acres of ground. The Medical Superintendent has been authorized to give the necessary instructions to the farmer, to have two acres of suitable land prepared for the reception of these cuttings as soon as the frost leaves the ground. I am looking forward to a period of greatly increased usefulness for this Asylum.

Capital Account.

The following expenditures on capital account are authorized; the purchase of the material for a new lumber-shed for the protection of lumber, etc., from the weather, to be made by the Bursar at a cost not to exceed $325. The lumber for the ceiling of the laundry and kitchen will also be purchased by the Bursar at a cost not to exceed $56. The Medical Superintendent is authorized to proceed

with the reconstruction of the windows in the main Asylum. The expenditure for this year on this work is estimated at $785. The purchase of a seed drill at $70, a cultivator at $20, and a farm waggon at $50, is also authorized to be charged to farm stock and implements account. The balance of the appropriation under this head will stand until further instructions. The Medical Superintendent is authorized to give orders immediately for spring planting of fruit trees to the extent of $300, and to make a requisition upon the Bursar for two hand lawn-mowers, at an expense of not more than $30 for the two. The Medical Superintendent is also authorized to make requisitions upon the Bursar for the amount of cane necessary to commence the industry of caneseating in the institution.

It having been represented to me that moccasins in place of ordinary shoes would be a more economical and at the same time a safer wear for the patients in the Refractory branch, the purchase of a quantity of buckskin, and beef moccasins is authorized in order that a test may be made. The purchase of fifty new bedsteads, to replace those which are old and worn out, is authorized, the amount of their cost to be charged to account of furniture and furnishings.

Some little inconvenience having arisen out of a neglect of the by-law, which requires the Medical Superintendent to be notified when goods are received in store, the following instruction is now given:—

The store-keeper on receipt of the goods invoices, will, as soon as he has checked the goods and found them to be correct, certify the latter and hand it to the Bursar, who will also initial it and pass it to the Medical Superintendent, and he having examined it, will cause it to be returned to the store-keeper.

The following change is authorized on salaries account:—The wages of the House-maid and Porter at the Refractory Branch to be increased from $8.00 to $10.00 per month.

On the 9th July I again visited the London Asylum and spent four days there. The number of patients in residence on that date was 880; 434 males and 446 females. Of the 434 males the work register showed 257 to be regularly employed in some sort of work. Of the females, out of 446 in residence, 334 were at work. The reason why a larger proportion of females than males are employed, is not that the men are less disposed to work than the women, but from the difficulty that is found in finding suitable work for the men to do. There is a considerable number of men, who, from their physical infirmities, are unable to employ themselves in such work as is usual for men. These men, where it is possible, are being taught to sew and knit. No doubt under this system the number employed on the male side will still be considerably increased.

In going through the Refractory Asylum, I observed that great strides had been made in the direction of employing patients. A few months ago this branch of the Asylum was literally a prison for a selected 180 of the most violent and intractable patients of the 800 or 900 of the population of this Asylum. Mechanical restraint of every kind was in frequent use, and the place was from morning until night and from night until morning a scene of violence and mad confusion. Now we find that under the beneficent system of quiet and persistent efforts to induce these unfortunates to employ themselves in some way, a great change has taken place. Women, who a while ago, were rarely out of restraint, and were never trusted with a knife or fork to eat with, are sitting quietly at their sewing or knitting, or are going steadily about the domestic work of the establishment, and are found sitting at table quietly using their knives and forks like the rest, while large working gangs of men are sent out every fine day to work on the farm and in the yards, and mechanical *restraint is never used.*

There is trouble sometimes with the men on a wet day, when they cannot go

out to work, for, wanting the air and exercise, and tranquilizing influence of employment upon the mind, they are restless during the day and cannot sleep so well at night.

The employment of female attendants in the male halls still works in the most satisfactory manner. The two additional ones, the employment of which I authorized in March, are now in the Asylum, and the results continue to be highly satisfactory. Indoor work on the men's side continues to increase. The industries now in active operation are cane and reed seating of chairs, rag mat-making, shoe-making, hair picking, sewing and knitting. Many of the men now mend their own clothes.

The Medical Superintendent informs me that one result of the advent of these ladies has been that some 50 or 60 men are now kept actively employed, who were never before induced to do anything.

My attention was called, by the Medical Superintendent, during this visit, to the bad odours arising from the slaughter house and piggery, and to the danger to the health of the large population of the Asylum, arising from the too close proximity of these buildings. I found the representations made by him in a report previously made to be fully borne out by the facts, and at once took measures for the removal of the danger. A site was selected at the back of the farm, on the bank of a spring creek, and on pretty high ground, half a mile or more from the Asylum, and instructions were given for the immediate removal of the objectionable buildings thereto.

Repeated representations have been made by the Medical Superintendent respecting the difficulty he has found in procuring and retaining the services of attendants for the female wards, and the female servants required in the institution, at the rate of wages he was authorized to offer. I made enquiries into this matter and satisfied myself of the necessity of an increased scale of payment for those classes of employees, and upon making a representation of the facts to the Hon. the Provincial Secretary accompanied by a recommendation, I was authorized to make the following increases :—

MAIN ASYLUM.

1	Female Supervisor in male halls, from	$17 00	to	$20 00	per month
2	do Assistants do	12 00	to	14 00	do
3	Supervisors, female halls do	12 00	to	14 00	do
4	Attendants do do	10 00	to	12 00	do
5	Night Attendants do do	12 00	to	14 00	do
6	Laundry Maids do	8 00	to	9 00	do
7	Housemaids do	9 00	to	10 00	do
8	do do	8 00	to	9 00	do

REFRACTORY BRANCH.

9	Supervisors, female halls	12 00	to	14 00	per month.
10	Attendants, do	10 00	to	12 00	do
11	Night Attendants do	11 00	to	13 00	do
12	do do	10 00	to	12 00	do
13	Assistant Cooks	9 00	to	10 00	do

COTTAGES.

14	Female Attendants	5 00	to	10 00	do
15	Housemaids	8 00	to	9 00	do

The Bursar was authorized to put the new scale in force from and after the 1st of August.

The Bursar was also authorized to purchase a new oil-cloth for the hall of the Medical Superintendent's house, the old one having become completely worn out.

My next inspection of the London Asylum was on the 27th September, and three following days.

On this occasion in addition to the ordinary inspection, I went over the patients' muster roll, and saw, and conversed with each one separately.

There was at this time a total population of 895 patients, 440 males and 455 females, of this number fifteen males and eleven females were found in bed, of the fifteen males in bed five were cases of consumption. All the others, male and female were cases of old age, epilepsy, paralysis, melancholia, etc., who were in bed part of the time, as their necessities or inclinations indicated. No acute disease of any kind existed in the institution. The patients were all cleanly and comfortably clad. There was no undue excitement in any of the wards except in the Refractory, where as it happened to be a rainy day when I mustered the patients, there was much discontent, and some little disturbances arising therefrom, at not being allowed to go into the open air about their usual avocations.

No restraint of any kind, whatever, was found in use.

The unusually wet season has brought to light some defects in the drainage system, which will require early attention. When the Asylum was built in 1870, a considerable quantity of wooden box drainage was constructed, which has now become rotten and almost useless. An appropriation will be asked for the reconstruction of these drains.

For the first time since the planting in May last, the ground was found sufficiently dry to enable an examination of the willow plantation to be made. The plants were found to be, although almost smothered in weeds, in a fairly healthy condition. Comparatively few instances were found where the slips had not taken root.

The potato crop of which there was a large area, can only be classed as a failure ; from the wetness of the season very extensive purchases of potatoes will be necessary in consequence, for the ensuing winter and spring. The hay crop was very abundant, the oats also turned out well, but on the whole the farm operations this year were not successful.

I inspected every part of the Asylum and farm, with a view to ascertaining the wants of the institution in the way of appropriation by the Legislature at the next session. Recommendations will be made, based upon the result of the inspection.

Orillia Asylum.

I visited this Asylum for the purpose of inspection, on the 18th and 19th of May.

Since the commencement of the official year—1st October, 1882—there have been 16 admissions, namely nine males, and 7 females. The discharges have been as follows :—One male transferred as a lunatic to the Hamilton Asylum. One male eloped and went to his home, where he was allowed to remain, at the request of his friends. One male was taken home by his mother, and one male was taken out by his friends on three months probation. One female was taken home by her friends, when in very feeble health, as it was thought the change might do her good. She has since died.

The deaths in the Asylum have been 14—seven males and seven females. This leaves in actual residence, on the day of inspection, 231, which, with the one out on probation, makes the number on the books 232.

The distribution of these inmates is as follows:—In the main Asylum there are 46 males, and 113 females—159.

In the cottage there are 73 inmates. All adult males.

All the females are kept at the main Asylum, also all the juvenile males. Only a sufficient number of adult males are kept at the main building to do the necessary work about the place: so far as practicable, all the adult males are kept in the cottages some distance away.

A thorough examination of both buildings, throughout their whole extent, showed that everything was kept in excellent order. Neither of these buildings, from their nature, can be made to look very attractive, but they were found to be thoroughly clean, so far as circumstances would admit, and well kept in every respect.

The patients were sufficiently well clothed, and their clothing was all cleanly and in good order. The only exception I noticed in this respect was an untidiness about the feet of some of the inmates of the cottage, arising from the absence of boot laces. This was explained by the fact that these particular patients would not keep the laces in their boots. I gave instructions to have shoes supplied for these patients which would not require lacing.

Some complaints have been made by the citizens of Orillia as to the situation of the building rented for a cottage, and some action had been taken by the Town Council in reference thereto. Enquiry was made amongst the residents of the town nearest the cottage, and the general opinion was elicited that the cottage was less of a nuisance in its present occupation, than it was when used as a tavern. The inmates at this cottage are all thoroughly quiet and harmless—not even noisy—and if the idle boys of the village could be kept from climbing upon the fences and other elevated positions in the neighbourhood, for the purpose of staring at the patients, I apprehend that no unpleasantness of any kind would be occasioned.

There had been a well-founded cause for complaint in the fact that sewerage was discharged in the shallow water, near the entrance to the wharf, but that has been remedied by extending the sewer pipe out into deep water, and no complaint can now be made under that head.

My attention was called to the state of the ceiling of the kitchen in the main Asylum, which was falling down and needed renewal. This ceiling is largely covered with steam pipes, belonging to the heating apparatus, and it would be impossible, without taking down all these pipes, to renew the plastering. As a sheeting of boards would be dangerous, it was finally decided to cover the ceiling with galvanized iron, and the Bursar was instructed to receive tenders from the three tradesmen in the village, who do that kind of work, and to give the work to the lowest tenderer.

The front verandah is in need of painting, and the purchase of the necessary quantity of paint is authorized.

The purchase of lumber and other material for repairing the log root-house is also authorized, according to the estimates of the carpenter, who places the cost at $40.

Material will also be purchased for the renewal of the flooring of the engine-room, and repairs to the laundry room.

The following purchases on account of furniture and furnishings were also authorized:—A large rug for the floor of the Medical Superintendent's office; new linoleum floorcloth for the Bursar's office; also linoleum floorcloth for the centre hall on first floor, including the stairs and landing; and a pair of lace curtains for the Matron's sitting-room.

The sum of $100 voted by the Legislature for planting and ornamentation

of grounds will be expended under the direction of the Medical Superintendent for the purpose intended.

The apparatus for heating water for baths at the cottage is found to be inefficient. Enquiries will be made as to the best means of remedying the defect, and the remedy applied.

I again visited the Asylum on the 22nd and 23rd of June. I had no special business for this visit, I therefore made simply a general inspection of the whole institution, and spent much time among the inmates. As a rule they were happy and contented, and I have every reason to believe that they were being well treated and cared for by the officers and attendants. The bodily condition of two or three of the inmates was somewhat low, but with these exceptions, all were in good health.

At this season of the year plenty of outdoor air and exercise can be had by the inmates, and so good health, as a rule, prevails. In the fall and winter when only a portion of the patients can go out, as a rule, frequently, a thoroughly satisfactory sanitary condition cannot be expected, owing to the smallness of the day rooms, and the imperfect ventilation of the building.

The various dormitories, day rooms, and other portions of the building used by the patients were in good order, and were clean and neat in appearance, as were also the bed and bedding.

I again visited the Asylum on the 4th September, and checked the roll of the Asylum. In doing so I necessarily saw every patient. On this occasion every patient, except those at work, was in the grounds or on the verandahs, with the exception of one who was in bed. A large number of males, as many as employment could be found for, were engaged in out-door work, and about 25 females in the kitchen, laundry and other in-door occupations. There was no restraint of any kind in use.

The stores were inspected and found to be well kept in every respect.

Ever since the establishment of the cottage and the removal of the 75 patients from the Hamilton Asylum, the laundry has been found to be too small for the increased work required of it, and the work has been carried on in it with very great difficulty. Any enlargement of the structure of the laundry is not practicable in the present building, but the efficiency can be increased by the addition of some more machinery. The only power available for driving the washing machine is derived from a pulley attached to a steam pump, a most unsatisfactory arrangement, and one which does not work well. This should be remedied by having a small steam engine suitable for the purpose. A centrifugal wringer is also much needed, and would increase the working power of the laundry very much. I shall ask for an appropriation for these purposes in the next estimates.

A PRIVATE ASYLUM.

THE HOMEWOOD RETREAT.

On the 28th November, I received an application for a license to maintain a private Asylum from the Homewood Retreat Association of Guelph, which has recently purchased a fine property in the outskirts of that city, and upon which they have erected a building well suited for private Asylum purposes.

This institution is fortunate in the possession of a managing staff composed of gentlemen of large experience and proved ability viz: J. W. Langmuir, Esq., for

fourteen years inspector of Asylums in the Province, President; E. A. Meredith, Esq., LL. D., for ten years inspector of Asylums for the old Province of Canada, Vice-President; and Stephen Lett, M. D., thirteen years a resident medical officer in the Asylum Service of Ontario, Medical Superintendent. These names are an ample guarantee, that the work the association proposes to do will be carried on with every regard to the comfort and well being of the patients committed to its care.

It will be seen from my report of inspection, that the association possesses in site and building all the requisites for its work in an eminent degree.

As this is the first instance of the establishment of a Private Asylum in this Province, I publish here for the information of the public, copies of the application for license, my report thereon, and the license issued by His Honour, the Lieutenant-Governor:—

TORONTO, November 28th, 1883.

To W. T. O'REILLY, ESQ.,

Inspector of Prisons and Public Charities for the Province of Ontario, Toronto:

SIR,—In conformity with the provisions of the Act respecting Private Asylums for the Insane and Inebriate, I beg, on behalf of "The Homewood Retreat Association," to make application for a license to keep and maintain a private asylum for insane persons, and a hospital for inebriates.

As required under the provisions of the Revised Statutes of Ontario, vol. ii., chap. 221, and Statutes of Ontario, forty-six Vic., cap. twenty-eight, I beg to furnish you with the following information in respect of such asylum.

First,—The asylum property is situate in the City of Guelph, between Delhi street and the River Speed, and comprises nineteen acres of land, all of which, with the exception of what is occupied by the asylum buildings, will be used for the exercise and recreation of the patients proposed to be received therein.

Second,—The license is to be issued to "The Homewood Retreat Association, of Guelph, Ontario," which is incorporated under Letters Patent.

Third,—The association has appointed Stephen Lett, M. D., at present assistant medical superintendent of the Asylum for the Insane, Toronto, to be the medical superintendent of the institution.

Fourth,—The present capacity of the asylum is sufficient for fifty patients, twenty-five of each sex. The lower ward is intended for females, and the upper ward, which is entirely distinct and separate, for males.

Fifth,—I enclose herewith four plans, numbered respectively from one to four, which plans are drawn on one-eighth scale, as required by the Act, comprising (1) the basement of the building, (2) the ground floor, (3) the first floor, and (4) the elevation of the building.

Sixth,—I also attach a schedule, marked "No. 5," referring, by numbers, to the various rooms in the said asylum and giving, as required by the act, the length, breadth, and height of each room.

All of which is respectfully submitted.

(Signed) J. W. LANGMUIR,

President, Homewood Retreat Association.

OFFICE OF THE INSPECTOR OF PRISONS AND PUBLIC CHARITIES,

TORONTO, 14th December, 1883.

SIR,—I have the honour to transmit herewith the application of the Homewood Retreat Association of Guelph, Ontario, for a license to keep and maintain a private asylum for insane persons, inebriates, and persons suffering from the excessive use of narcotics, accompanying which will be found four plans, numbered respectively, one to four,

exhibiting the elevation of the structure proposed to be used for the purposes of the asylum, the first floor plan of the same, the ground floor, and the basement plan, also a schedule giving the length, breadth and height of each room in the asylum.

As required by the provisions of the Act respecting Private Lunatic Asylums, R. S. O., cap. 221, and the Act respecting Private Asylums for Insane Persons and Inebriates. Statutes of Ontario, forty-six Vic., cap. twenty-eight, I visited the proposed asylum on the 13th inst., and minutely inspected the same, and now beg to report as follows :—

The asylum is situated in the north-east section of the City of Guelph, between Delhi Street, and the River Speed. While within the corporation limits, and being therefore convenient for receiving patients, it is entirely removed from all other buildings, thereby securing the necessary privacy and quietness that such an establishment should have.

The land attached to the asylum comprises nineteen acres of finely wooded and ornamental grounds and with every facility for obtaining effective drainage, pure air and water, as well as all the other sanitary requisites of such an institution. Of the nineteen acres only about two acres are occupied with buildings, all the rest being intended for the exercise and recreation of the patients, for which purpose it is admirably adapted.

The buildings, as shewn on the accompanying plan, comprise :

1. A wing two stories high for the dormitories, sitting-room, etc., designed for the patients.

2. A main structure attached to the same containing, on the ground floor, the offices and reception rooms, and the music hall, and in extension the kitchen and laundry.

3. The quarters of the medical superintendent and his family are on the first floor of the main structure.

4. There is excellent basement accommodation underneath the man building and wing for storage, heating, and other domestic purposes.

The stables, barns, etc., face on Delhi street, and while at a convenient distance for easy access, they are quite isolated from the Asylum structure.

I have made a very minute inspection of every part of these buildings and structures and find that they are, in every respect, well suited and adapted for the purpose for which they are designed. The structure itself is a strong and substantial building of stone, with brick partitions separating every apartment. In length, breadth and height each room is as stated in schedule No. 5 herewith attached. No separate sleeping room has less than 1000 cubic feet of space for each patient, and some have twice that quantity, in addition to which, each sleeping-room has a transom over the door, opening off a hall 12 feet wide. Every room has also a separate means of ventilation, consisting of openings at the top and bottom connected with a main duct heated for the purpose of creating artificial draft. In addition to the wide and spacious corridor there is a large alcove, well furnished with sofas, easy-chairs, mirrors, and carpets, as well as fire-place for a patients' sitting-room. At the end of each corridor there is a transept hall connecting with the patients' dining-room, conservatory, billiard-room, etc. The amusement hall and chapel is in the main building.

The Asylum is designed for both sexes, and for the present it is intended to receive and treat insane persons, inebriates and persons addicted to the excessive use of narcotics.

The lower, or ground floor corridor, is exclusively for females, and the upper floor, or first floor for males. These corridors are entirely distinct, with a separate entrance to each from the ante-room in the main building, and each corridor has its own dining-room and requisite apartments.

It is proposed, for the present, to confine the number of patients to be received to 50—25 of each sex, for which number there is ample space in every respect.

As the result of my inspection, I beg to report that the buildings referred to in the application of the "Homewood Retreat Association" are exceedingly well suited, both in point of location and in respect to their interior arrangements, for a private Asylum, and I have further to report that the buildings and premises are ready, and fit for :—

1st. A Private Asylum for the insane.

2nd. An hospital for the reclamation and care of inebriates, and

3rd. The care and treatment of persons addicted to the excessive use of narcotics.

And I have the honour respectfully to recommend, for the consideration and action

of His Honour, the Lieutenant Governor in Council that a license do issue to the Homewood Retreat Association, to keep and maintain the above named "Homewood Retreat" for the purpose of a private Asylum for 25 male and 25 female patients.

All of which is respectfully submitted.

W. T. O'REILLY.
Inspector.

THE HON. A. S. HARDY,
Provincial Secretary.

COPY OF AN ORDER IN COUNCIL APPROVED BY HIS HONOUR THE LIEUTENANT-GOVERNOR, THE 21ST DAY OF DECEMBER, A.D., 1883.

Upon consideration of the Report of the Inspector of Prisons and Public Charities, and on the recommendation of the Honourable, the Attorney General, the Committee of Council advise that a License be issued to the Homewood Retreat Association of Guelph, authorizing them to keep and maintain the said Retreat for the purposes of a Private Asylum, and that such license be in accordance with the draft herewith submitted.

Certified,

J. G. SCOTT,
Clerk, Executive Council, Ontario.

The Honourable,
THE PROVINCIAL SECRETARY.

LICENSE.

JOHN BEVERLEY ROBINSON,
Ontario.

By His Honour, the Honourable, JOHN BEVERLEY ROBINSON, *Lieutenant-Governor of the Province of Ontario.*

To All to Whom these Presents shall come.
GREETING:

Whereas the Homewood Retreat Association, of Guelph, Ontario, having given notice in accordance with the provisions of an Act respecting Private Asylums for Insane Persons and Inebriates, Forty-sixth Victoria, Chapter Twenty-eight, that it was desirous of obtaining a License for keeping a Private Asylum, and Hospital for Inebriates under the provisions of the said Act at "The Homewood Retreat," being certain buildings, lands and premises in the City of Guelph, situated between Delhi Street and the River Speed, and the said Association having fyled in the Office of the Inspector of Prisons and Public Charities of Ontario the plans, description and statements required under the Third Section of the said Act, the Inspector of Prisons and Public Charities visited such proposed Private Asylum, and on the fourteenth day of December, instant, reported that the buildings and premises aforesaid were ready and fit for occupation as a Private Asylum for the Insane, and as an Hospital for the reclamation and care of Inebriates and for the care and treatment of persons addicted to the excessive use of narcotics.

This is to certify that the said Homewood Retreat Association, of Guelph, Ontario, is hereby licensed to use and employ the said buildings and premises for the reception of not more than twenty-five male, and twenty-five female inmates, who shall be certified under the provisions of the said Act, or of the Revised Statute respecting Private Lunatic Asylums, to be either insane or idiotic, or persons of unsound mind, or who under the provisions of "An Act to provide for the establishment of an Hospital for the reclamation

and care of habitual drunkards," shall be committed thereto as inebriates, or persons who under the provisions of the said last mentioned Act shall make voluntary application to be admitted thereto.

Given under my hand and office seal, at Toronto, this Twenty-first day of December, in the year of our Lord one thousand eight hundred and eighty-three and of Her Majesty's reign the Forty-seventh.

By command of the Lieutenant-Governor-in-Council.

ARTHUR S. HARDY,
Secretary.

Annexed hereto are the Reports of the Medical Superintendents of the Asylums at Toronto, London, Kingston, Hamilton and Orillia, together with tabulated statements, giving details of the working of each of these institutions:—

REPORTS OF THE MEDICAL SUPERINTENDENTS FOR THE YEAR ENDING 30TH SEPTEMBER, 1883.

ASYLUM FOR THE INSANE, TORONTO.

OCTOBER 1ST, 1883.

To the Inspector of Prisons and Public Charities:

SIR,—I have the honour to herewith present the Forty-third Report of this Asylum beginning with October 1st, 1882, and ending with September 30th, 1883.

The usual tables are herewith appended, containing such information as is annually required by by-law and statute.

Deaths.

Our death rate has been very uniform for several years past, and considerably below the average mortality in Asylums. The following table will show the proportion of deaths to the total population under treatment for five years.

	Years.	Deaths.	No. under Treatment.	Percentage of Deaths.
Table showing the Percentages of Deaths for five years, ending September 30th, 1883.	1879	30	780	3.84
	1880	33	756	4.36
	1881	35	762	4.59
	1882	33	798	4.18
	1883	39	863	4.50

An average of four and a-half per cent of deaths amongst diseased, infirm and aged people is a fair estimate of the healthfulness of our inmates, and must be esteemed as evidence of favourable sanitary surroundings.

Recoveries.

The recoveries have been sixty-five out of 162 admissions during the year. This gives forty per cent. out of that number who have become convalescent. This is seven and a-half per cent. of the entire population. In 1882 the percentage of recoveries from admissions was thirty-two per cent. of the entire population. Out of the 162 admissions three came back a second time, making 159 *persons*, and to that extent reducing the ratio of deaths and recoveries. The ninety-five per cent. of chronics should not be calculated in the table of cures.

Restraint.

Since the 6th of January last personal restraint has not been resorted to. It is an experiment and as such, so far, has succeeded very well. Of course had we more attendants in proportion to the patients, the adoption of non-restraint would not be difficult, but when as many as 18 patients have on an average to be cared for by one attendant the practicability of this plan cannot be fairly tested. It is easy for some Asylums, where there are three attendants to our one, to adopt this plan of non-mechanical restraint, and substitute for it that which is personal. The whole problem reduces itself to sufficient and efficient supervision. In some cases the most merciful treatment consists of mechanical restraint, and when such arises there will be no hesitation to resort to it, but during the nine months of disuse such cases have not existed. A gradual diminution of mechanical restraint has been going on for years. In the men's refractory ward there has been no restraint of any kind for over seven years. This is not said boastfully, but it has happened that the class of patients in charge have not required it. There have been many maniacal and destructive patients, but a judicious exercise of control by discreet attendants has had great influence over many such in quieting them down. It is sane and insane human nature to resist opposition or restraint in any form, and the removal of it is a sedative in a majority of cases. Were we—as the manner of some is—to call it "an open door system," where attendants stand as sentries at the unlocked doors and only let out the harmless and safe; or were we to call it "non-restraint," where patients are held by attendants, we would consider ourselves guilty of an organized hypocrisy. We have open doors in our three cottages and in the lowest story of our main building. There is no particular merit in that, as all the patients occupying these retreats are harmless, quiet, and have no disposition to stray away. A large number of them could not be driven away. They look upon the Asylum as a permanent and comfortable home for life.

Reading.

The comment has been made that few patients read books, periodicals and newspapers. During 12 months 1,369 volumes were given out to and read by patients. Newspapers are eagerly sought after, because by these our patients know of what is going on in the external world. It would astonish some would-be critics to see how eagerly the maps on the walls are daily scanned by many such readers in order to find out places mentioned in the press. The only precautions we take in the distribution of such reading is to exclude, as far as possible, erotic literature from the prurient; religious books from those afflicted with religious melancholy; murders and suicides from those of homicidal or suicidal impulses, lest these accounts might be suggestive. To do otherwise would be adding fuel to the flame. The good influence of select reading, not only in giving information and in killing time, but also in making the patients forget themselves and their troubles, cannot be overestimated as an agency inciting towards recovery.

Divine Service.

We have three religious services every Sabbath. The Episcopalian in the morning at 9:30; the other denominations by turn at 2:45 p.m., and the Roman Catholic at 4 o'clock p.m. It will be taken for granted that our religious interests are well cared for under the present arrangement. It is open for consideration if one hearty service each Sunday, by the Protestant churches taking it in turn, would not be the best arrangement to adopt.

Census of Insanity.

It is a matter of regret that an effort has not been made at each decennial census to procure a numbering of the idiots and insane in the Dominion. There is no other reliable way by which an approximation to the proportion of this class, or even the absolute number in the general population can be procured. This work has been done by the United States and by Britain at stated periods in every ten years, with satisfactory results. It is true every enumeration must only be at best an approach to the truth. Yet this

method is the best which can be adopted, simply because it is a house-to-house visitation. In comparing our insane population with that of our neighbours it is reasonable to suppose that the proportion would vary but little in both. The surroundings, the conditions of life, habits and tendencies are very much alike.

It is interesting to note in the United States census compend, that out of a population of about fifty millions 91,997, were insane in 1880. Of these 44,408 were men and 47,589 were females. 40,541 were in asylums ; 9,302 were in poor houses ; 417 were in gaols ; 235 were in other institutions, and the large number of 41,101, were cared for at home. The proportion of insane to the whole population was one to every 622 in 1870 ; and one to every 545 in 1880. It is possible the census last taken was more correct than that of 1870, and consequently the increase of insane is not quite so large as stated. There is no donbt, however, that insanity is on the increase in that country. The population of the United States increased during that decade 30 per cent., but the insane increased at a ratio of 146 per cent. Of the insane 44½ per cent. were in asylums ; 45 per cent. at home and the balance of 10½ per cent were in poor houses.

As far as can be gleaned indirectly the exhibit of this Province is more favourable than this shows. Out of a population of two millions at least 90 per cent. of the insane are under asylum care. We will not be far from the facts, if we calculate all our insane at 2,800, and over 2,700, are now in asylums. This number would be a proportion of 1 to 714, of this population. Were we to include our 265 idiots in the estimate still our proportion would be 1 to 652 of our population. The importance of enumerating our insane at every general census-taking must be admitted and only in some such way can we properly estimate the number of these thus afflicted. It is scarcely credible, that while nine out of every ten of our insane are housed in asylums, only one half of such are so cared for in the neighbouring republic. Have the malevolent assaults of designing men against excellent institutions anything to do with this state of things? If so, they have much to account for in unsettling the public mind.

Expenditure.

It may be of interest to the few who read Asylum Reports to know that *per capita* cost covers all expenses of every kind in connection with each patient. Food, clothing of free patients, all salaries, repairs, and such like are included in this estimate. In short, for $132.40 a year, per patient, outlays of every kind are included, excepting the erection of permanent structures. It is fair to state in this connection that our garden supplies are not included in this estimate. These we largely raise by means of the labour of patients. Those who provide families with the ordinary necessaries of life can understand this item.

Last year 41 were added to our permanent population At the average cost per patient, $5,600 should have been added to the sum in the estimates. This not having been done a curtailment of necessaries had to be made to keep our maintenance account within bounds. It is to be hoped the additional amount will not be overlooked in the estimates of the coming year. Our usual cost is at best nearly poor house rates and any reduction becomes a hardship. We have had food in sufficient quantity and of good quality, but we lack variety, especially in fruits, when our funds run short. Our most important work is not merely to act as custodians of the chronic, but to cure the acute, cases. Next to fresh air comes wholesome and varied food, as the builders up of depreciated nerve systems. The adult appetite revolts against a uniform dietary however good in itself. If this be true of the healthy, how much greater need is there to give generous changes to those who are sick. To the insane victim of an acute disease food thus varied is invaluable as a remedial agent. Our patients cost, on an average, for food twenty-six cents a day.

Paying Patients.

The following table will show the receipts for paying patients since my incumbency in 1875 :—

RECEIPTS.

1876	$17,189
1877	21,439
1878	26,312
1879	21,437
1880	23,607
1881	29,687
1882	27,667
1883	36,210
Total in eight years	$202,638

The assets are, at least, $60,000 more, but, as in all financial transactions, bad debts make up a heavy percentage of losses, so we have no exception to this rule. A good deal may yet be collected from bondsmen and estates, but which cannot be reached at present.

Probations.

Twenty-nine patients were sent home on trial. Of that number one died and one was returned, leaving 27 as the number retained by friends. We have not been able to ascertain the exact count of those who had recovered.

Furniture and Furnishings.

A considerable number of bedsteads, benches, and settees are needed. None have been furnished for several years—except in cottage B. As a consequence our supply is somewhat dilapidated. It does not pay to buy ordinary furniture, as, under the best care, the insane cannot be expected to handle it as gently as do well persons. Money is thrown away on spindle-shanked and weak-backed chairs, sofas, settees, benches and bedsteads. More carpeting and oil-cloth are needed for our private wards. Some of such have been in use for many years, and may be classed among the shabby genteel. We have done our best with our dilapidated furniture, and by bracing up, and by replacing in sections the original designs are lost, and new shapes of endless variety and unique invention have taken their place. During the early part of the year, on account of lack of necessary material for repairs, it looked as if we would have to dispense with such articles.

Guards.

A statement has been made that the guards in the sitting-rooms and bedrooms of the central main building do not seem to be needed. They have been many years on the windows, which are of French design and open like doors. Were this protection removed patients could easily walk out at windows three and four stories from the ground. The suicide and homicide would want no better opportunity than such traps would present. Not only so, but patients could suddenly expose their persons, (as many are so inclined) to the gaze of the public coming and going at the main entrance. Nothing short of structural changes would justify the removal of these guards and the introduction of iron sashes. These centre rooms were originally intended for offices and and officers' quarters, but owing to pressure for space they have been taken for general use.

Repairs.

Ordinary repairs have been going on during the year. In all old buildings like this Asylum, these must necessarily be somewhat extensive. A large area of flooring is worn out, and rottenness is seen everywhere in our joisting, especially in the bath-rooms and closets. In many places the floors have become dangerous and are worn so thin that the heels can be forced through them. Many of these have been in use for over 20 years. At least 25,000 feet (surface measure) of hardwood flooring will be needed for renewals. The roofs of the main building and wings leak very badly. During heavy rains we are obliged to catch the water in tubs and pails as it pours into the upper wards. The side-

walks need relaying in many places. A more improved method of heating is required very much. This has become a yearly request, on the ground of efficiency and economy.

Crops.

All our crops are about the average, except the potato crop; it has been comparatively a failure. This is the first deficiency which has taken place for many years, and as a result the most of our potatoes for consumption will require to be purchased. They promised well at first, but in the formative stages a blight came over them and their growth was at once retarded. This disease has been more or less prevalent in the Province. This is a serious loss to us, as we had 29 acres under crop, and will necessitate the purchase of at least 40,000 bushels for consumption and seed. On account of the small farm at our disposal we must largely confine our cultivation to roots, as we have no acreage for such crops as hay and oats. Attention is again called to the necessity of procuring more arable land. We could easily work a 300 acre farm at little cost for labour. The receipts from this farm are $13,763.

Amusements.

1882.

Nov. 1st.—Concert by the "Toronto Carol Society"; Mr. Jas. Spence, Conductor.
" 27th.—Concert by Madam Stuttaford and pupils.
Dec. 4th.—Concert by the Dundas St. Methodist Church Choir; E. N. Rossiter, Conductor.
" 7th.—Concert by the "Knox Church Young People's Progress Society."
" 16th.—Concert by Prof. Chas. Bohner and pupils.
" 21st.—Concert by the College St. Methodist Church; J. Alexander, Esq., Conductor.

1883.

Jan. 4th.—Concert by the Carleton St. P. M. Church Choir; John Kent, Esq., Conductor.
" 9th.—Concert by the Berkeley St. Church Choir; J. M. Faircloth, Conductor.
" 16th.—Concert by Grace Church Choir; Rev. Dr. Mc Carrol, Conductor.
" 17th.—Concert by the Trinity East Church Choir. Kindness of Rev. A. Sanson.
" 18th.—Concer thy Church of the Redeemer Choir. Kindness of Rev. Septimus Jones.
" 22nd.—Concert by the kindness of Madam Stuttaford and friends.
" 24th.—Concert by the Bond St. Congregational Church Choir: John Impy, Esq., Conductor.
" 25th.—Concert by St. James' Cathedral Choir; E. R. Deward, Esq., Organist.
" 31st.—Concert by St. Michael's Cathedral Choir; Very Rev. J. M. Laurent, V. G., Conductor.
Feb. 3rd.—Concert by the kindness of Prof. Chas. Bohner and Pupils.
" 5th.—Concert by the Bathurst St. Church Choir; by the kindness of very Rev. J. Rooney, V. G.
" 6th.—Concert by Old St. Andrew's Church Choir: A. W. Thomas, Esq., Conductor.
" 8th.—Concert by Queen St. Methodist Church Choir; J. B. Baxter, Organist.
" 15th.—Concert by the Northern Congregational Church Choir; Geo. W. King, Esq., Organist.
" 27th.—Concert by St. Stephen's Church Choir; Miss Broughall, Organist.
" 28th.—Concert by "Knox College Glee Club." Kindness of R. C. Tibbs, Secretary.
Mar. 8th.—Concert by St. Paul's Church Choir. Kindness of Rev. T. C. DesBarres.
" 15th.—Concert by the Church of the Ascension. Kindness of Rev. Mr. Baldwin.
" 21st.—Concert by kindness of Prof. Chas. Bohner and friends.
Ap. 17th.—Concert by "Cool Burgess" and company.
May 22nd.—Concert by Dundas St. Methodist Church Choir.

In addition to the above a dance for the patients every Friday night through the winter months, and garden parties and other out door amusements during the summer.

Work.

Out of our population 214 patients were employed. Were there no paying patients the proportion would have been much greater. Friends who contribute full rates towards the maintenance of their insane are not always willing to allow such patients to perform manual labour. We try to convince such of the error of these ideas, and endeavour to show how much better it is for patients to be employed, but often without success.

The usual routine work has gone on as usual during the year with few changes and few incidents worthy of note. My thanks are due to officers, employees and attendants for their cordial support in the harassing and arduous work which all have at heart.

Your kindly interest in asylum work and your earnest endeavour to second our efforts are fully appreciated by every one of us.

I have the honour to be, Sir,

Your obedient servant,

DANIEL CLARK.

Medical Superintendent.

ANNUAL STATISTICAL REPORT

Of the operations of the Asylum for Insane, Toronto, for the year ending 30th September, 1883.

TABLE No. 1.

Shewing movements of Patients in the Asylum for the official year ending 30th September, 1883.

	Male.	Female.	Total.	Male.	Female.	Total.
Remaining October 1st, 1882				346	355	701
Admitted during year :—						
By Lieutenant Governor's warrant	38	15	53			
" medical certificate	41	68	109			
				79	83	162
Total number under treatment during year				425	438	863
Discharges during year :—						
As recovered	29	36	65			
" improved	2	9	11			
" not insane	2		2			
" unimproved	4	12	16			
Total number of discharges during year	37	57	94			
Died	15	24	39			
Eloped (not insane)	1		1			
Transferred	14	12	26			
				67	93	160
Remaining in Asylum, 30th Sept., 1883				358	345	703
Total number admitted since opening of Asylum				2999	2679	5678
" discharged	1587	1430	3017			
" died	720	601	1321			
" eloped	51	11	62			
" transferred	283	292	575			
				2641	2334	4975
" remaining, 30th Sept., 1883				358	345	703

TABLE No. 2.

Shewing the maximum and minimum number of Patients resident in the Asylum, the total number of days' stay of Patients, and the daily average number of Patients in the Asylum, from the 1st October, 1882, to 30th September, 1883.

	Male.	Female.	Total.
Maximum number of patients in residence (on the 25th of March)....	364	350	714
Minimum " " (on the 23rd of October) ..	336	344	680
Collective days' stay of all patients in residence during year.....	130075	126520	256595
Daily average population	356.37	346.63	703

	Admissions of Year.			Total Admissions since opening.		
	Male.	Female.	Total.	Male.	Female.	Total.
Social State.						
Married	32	41	73	1340	1700	3040
Widowed	.....	.....	.....	.....	.....	.....
Single	47	42	89	1659	979	2638
Not reported	.....	.....	.....	.....	.....	.....
Total	79	83	162	2999	2679	5678
Religion.						
Presbyterians	14	15	29	668	619	1287
Episcopalians	20	23	43	880	775	1655
Methodists	15	24	39	505	456	961
Baptists	4	2	6	44	35	79
Congregationalists	.....	1	1	24	36	60
Roman Catholics	17	12	29	642	562	1204
Mennonites	.....	.....	.....	.....	.....	.....
Quakers	.....	.....	.....	.....	.....	.....
Infidels	.....	.....	.....	.....	.....	.....
Other denominations	3	6	9	183	166	349
Not reported	6	.....	6	53	30	83
Total	79	83	162	2999	2679	5678
Nationalities.						
English	8	14	22	512	429	941
Irish	14	10	24	905	847	1752
Scotch	5	4	9	385	359	744
Canadian	46	50	96	980	870	1850
United States	2	3	5	106	94	200
Other Countries	3	2	5	98	72	170
Unknown	1	.....	1	13	8	21
Total	79	83	162	2999	2679	5678

TABLE No. 3.

Shewing the Counties from which Patients have been admitted up to 30th September, 1883.

COUNTIES.	Admitted During Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Algoma District	1	2	3	7	2	9
Brant				43	42	85
Bruce	3		3	19	7	26
Carleton	2	1	3	60	47	107
Dufferin						
Elgin				26	21	47
Essex				17	12	29
Frontenac				95	64	159
Grey	4	4	8	68	55	123
Haldimand				25	22	47
Halton	1		1	71	56	127
Hastings	3	4	7	62	52	114
Huron				49	45	94
Kent				21	20	41
Lambton	1		1	25	21	46
Lanark				49	39	88
Leeds and Grenville	2		2	55	45	100
Lennox and Addington		1	1	21	13	34
Lincoln				92	80	172
Middlesex		1	1	70	66	136
Muskoka District	1	1	2	3	3	6
Norfolk				15	17	32
Northumberland and Durham	7	9	16	211	185	396
Ontario	2	5	7	106	100	206
Oxford		1	1	28	30	58
Peel	5	2	7	100	87	187
Perth				41	38	79
Peterborough	2	3	5	62	57	119
Prescott and Russell				13	17	30
Prince Edward				25	24	49
Renfrew	1		1	4	6	10
Simcoe	1	4	5	105	106	211
Stormont, Dundas and Glengarry				58	56	114
Victoria	3	2	5	36	34	70
Waterloo	1	1	2	40	40	80
Welland		2	2	42	40	82
Wellington		1	1	118	126	244
Wentworth	1	2	3	215	191	406
York	35	36	71	841	794	1635
Not classed	3	1	4	61	19	80
Total	79	83	162	2999	2679	5678

TABLE No. 4.

Shewing the Counties from which Warranted Cases have been admitted up to 30th September, 1883.

COUNTIES.	Admitted During Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total
Algoma District	1		1	5		5
Brant				2	2	4
Bruce				4		4
Carleton	1		1	11	1	12
Dufferin						
Elgin						
Essex						
Frontenac				4	2	6
Grey	1	1	2	29	5	34
Haldimand				5	1	6
Halton				4		4
Hastings	2	4	6	16	12	28
Huron				3		3
Kent				2		2
Lambton				1	1	2
Lanark				7	2	9
Leeds and Grenville				6	2	8
Lennox and Addington				11		11
Lincoln				11	9	20
Middlesex				2	1	3
Muskoka District						
Norfolk				1	1	2
Northumberland and Durham	3	3	6	33	10	43
Ontario	2		2	28	9	37
Oxford				1	4	5
Peel				18	3	21
Perth				7		7
Peterborough	1		1	18	5	23
Prescott and Russell				5	2	7
Prince Edward				3		3
Renfrew				4	1	5
Simcoe				24	12	36
Stormont, Dundas and Glengarry				9	2	11
Victoria	3	1	4	24	9	33
Waterloo				8	4	12
Welland				6	3	9
Wellington				12	3	15
Wentworth	1		1	35	8	43
York	23	6	29	149	66	215
Not classed						
Total admissions	38	15	53	508	180	688

TABLE No. 5.

Shewing the Length of Residence in the Asylum of those discharged during the year.

Reg. No.	Initials.	Sex.	When Admitted.	When Discharged.	Remarks.
5507	E. J. H..	F.....	September 16, 1882.....	October 4, 1882.....	Recovered.
5502	F. S.....	M.....	" 10, "	" 9, "	"
5164	A. G. S....	F.....	January 24, 1879.....	" 20, "	Unimproved.
5405	F. N.....	F.....	November 21, 1881	" 26, "	Recovered.
5442	W. E. B...	M.....	April 26, 1882.....	" 28, "	"
5468	E. A. T....	M.....	July 7, "	November 7, "	"
5437	A. D.....	M.....	April 14, "	" 8, "	"
5471	S. B.....	F.....	July 13, "	" 9, "	Improved.
5449	L. S.....	F.....	May 2, "	" 18, "	Recovered.
5430	A. H.....	F.....	March 13, "	" 20, "	"
5379	C. T.....	M.....	August 20, 1881	" 29, "	"
5470	A. McC....	F.....	July 12, 1882.....	" 30, "	Improved.
5479	H.M.E.H.	F.....	August 5, "	December 1, "	Recovered.
5494	M. C.....	F.....	August 25, "	" 5, "	"
4322	J. McD....	M.....	March 26, 1875.....	" 6, "	Unimproved.
5476	S. W.....	F.....	July 26, 1882	" 12, "	"
5517	A. H.....	F.....	October 6, "	" 21, "	"
5417	J. S.	F.....	February 2, "	" 27, "	"
5475	M. A. R...	F.....	July 25, "	" 27, "	Improved.
5522	E. J. H....	F.....	October 18, "	January 2, 1883.....	Recovered.
5464	A. H. S...	M.....	June 20, "	" 6, "	"
5480	E. M. R...	F.....	August 7, "	" 6, "	"
5489	H. E. A...	F.....	August 21, "	" 6, "	"
5530	M. J. G....	F.....	October 25, "	" 6, "	"
5550	E. N.....	F.....	December 9, "	" 19, "	"
5571	R. J. S....	M.....	January 16, 1883.....	" 26, "	"
5519	J. E.	F.....	Ocbtoer 12, 1882.....	" 30, "	"
5570	J. C. H....	M.....	January 15, 1883.....	" 31, "	Unimproved.
5537	C. F. D....	F.....	November 4, 1882.....	February 1, "	Recovered.
5422	D. C.....	F.....	February 11, "	" 3, "	Improved.
5549	C. U. H...	F.....	December 5, "	" 6, "	Unimproved.
5556	A. McF....	F.....	December 23, "	" 8, "	Recovered.
5536	A. M.....	M.....	November 2, "	" 13, "	"
5580	W. P.....	M.....	January 25, 1883.....	" 13, "	Not insane.
5500	H. P.....	F.....	September 5, 1882	" 23, "	Recovered.
5490	M. A. W..	F.....	August 21, "	March 5, "	"
5581	D. Q.....	M.....	January 26, 1883.....	" 14, "	"
5545	M. B. P...	F.....	November 17, 1882.....	" 21, "	"
5555	M. J. H...	F.....	December 21, "	" 22, "	"
5544	W. M.....	M.....	November 16, "	" 28, "	Improved.
5366	J. B.....	F.....	July 4, 1881.....	" 28, "	Recovered.
5527	J. B.....	M.....	October 23, 1882	April 3, "	"
5565	M. J. C....	F.....	January 5, 1883.....	" 3, "	Unimproved.
5567	E. H. C....	F.....	January 5, "	" 4, "	"
5477	H. B. S. B.	M....	July 29, 1882.....	" 9, "	Recovered.
5548	C. McC....	F.....	November 30, "	" 10, "	"
5564	J. M. C....	F.....	January 5, 1883.....	" 11, "	Unimproved.
5565	E. S. C....	F.....	January 5, "	" 11, "	"
5584	D. C.....	M.....	February 4, "	" 12, "	Recovered.
5563	W. L.....	M.....	January 5, "	" 12, "	"
5418	J. F.....	F.....	February 3, 1882.....	" 13, "	Unimproved.
5598	A. P.....	F.....	February 27, 1883.....	" 16, "	Improved.
5499	J. I.....	M.....	September 2, 1882.....	" 23, "	Recovered.
5601	S. H.....	F.....	March 6, 1883	" 24, "	Unimproved.
5583	E. H.....	F.....	February 1, "	" 30, "	Recovered.
5607	J. W.....	M.....	March 25, "	May 1, "	"
5236	G. G. G....	M.....	December 2, 1879.	" 2, "	"
5511	F. P.	F.....	September 20, 1882.....	" 11, "	Unimproved.
5597	M. A. H...	F.....	February 24, 1883.....	" 18, "	Recovered.
5176	R. B.....	M.....	February 8, 1879.....	" 21, "	"
5620	W. L.....	M.....	April 26, 1883.....	" 24, "	"

TABLE No. 5—*Continued.*

Reg. No.	Initials.	Sex.	When Admitted.	When Discharged.	Remarks.
5605	S. D.	M.	March 23, 1883	May 26, 1883	Recovered.
5394	M. E. H.	F.	October 27, 1881	June 1, "	"
5611	C. S.	M.	April 12, 1883	" 1, "	Unimproved.
5542	P. F.	M.	November 9, 1882	" 4, "	Recovered.
5463	J. K. M'C.	M.	June 13, "	" 5, "	"
5529	J. H.	F.	October 24, "	" 8, "	"
5633	H. N.	M.	May 29, 1883	" 9, "	"
5538	G. M.	M.	November 4, 1882	" 10, "	"
5520	F. S.	M.	October 15, "	" 13, "	"
5619	A. D. W.	F.	April 26, 1883	" 16, "	"
5456	L. L.	F.	May 25, 1882	" 16, "	Improved.
5495	M. McK.	F.	August 26, "	" 23, "	Recovered.
5472	J. E. H. T.	F.	July 19, "	" 29, "	Unimproved.
5642	L. C.	M.	June 20, 1883	July 3, "	Recovered.
5621	E. J. W.	F.	April 28, "	" 6, "	"
5523	S. N.	F.	October 19, 1882	" 7, "	"
5576	S. H. E. B.	F.	January 21, 1883	" 11, "	"
5651	W. M.	M.	July 10, "	" 14, "	Not insane.
5631	M. R.	F.	May 28, "	" 20, "	Recovered.
5640	M. K.	F.	June 15, "	" 20, "	"
5593	W. E.	M.	February 16, "	" 25, "	"
5595	G. McG.	M.	February 20, "	" 26, "	"
5425	E. C.	M.	February 22, 1882	" 26, "	Unimproved.
5557	M. T.	F.	December 28, "	" 31, "	Recovered.
5531	E. A.	F.	October 26, "	August 3, "	Improved.
5628	S. E.	M.	May 22, 1883	" 16, "	"
5608	C. H. C.	F.	March 29, "	" 16, "	Recovered.
5483	L. S.	F.	August 10, 1882	" 27, "	"
5630	E. S.	F.	May 25, 1883	" 27, "	"
5462	J. P. B.	M.	June 9, 1882	September 13, "	"
5610	S. C. G.	F.	April 6, 1883	" 27, "	"
5635	N. T.	F.	June 7, "	" 28, "	Improved.
5342	J. J. D.	M.	April 19, 1881	" 29, "	Recovered.

TABLE No. 6.

Shewing Age, Length of Residence, and Proximate Cause of Death of those who died during the year ending 30th September, 1883.

Reg. No.	Initials.	Sex.	Age.	Date of Death.	Residence in Asylum.			Proximate Cause of Death.
					Years.	Months.	Days.	
3513	M. R ...	F.....	71	October 3, 1882	13	3	18	Senile Decay
2221	E. A. A...	F.....	65	" 8, "	22	11	4	Epilepsy.
5440	N. M. ...	M.....	60	" 9, "	.....	5	17	Paresis.
5423	J. McL....	F.....	25	" 18, "	.....	8	7	Phthisis.
5157	E. B	M.....	?	November 5, "	3	9	22	Marasmus.
4827	M. A. B...	F.....	?	" 11, "	5	6	24	Heart Disease.
5108	W. B.....	M.....	48	" 24, "	4	2	18	Marasmus.
5258	M. E. F...	F.....	28	January 16, 1883	2	9	29	Phthisis.
4492	M. McA...	M.....	74	" 23, "	6	9	21	Senile Decay.
5546	H. M.....	M.....	20	" 23, "	.....	2	2	Phthisis.
5575	W. H. T..	M.....	48	February 6, "	.....	.....	16	Cerebritis.
5516	E. M.....	F.....	70	March 13, "	.....	5	14	Diarrhœa.
4454	M. F.....	F.....	43	" 14, "	7	.....	21	Marasmus.
5514	G. A.....	F.....	71	" 27, "	.....	6	1	Senile Decay.
4321	C. A. S....	F.....	37	April 1, "	8	.....	6	Phthisis.
5330	J. A.....	M.....	70	" 5, "	2	1	20	Heart Disease.
5559	J. H.....	M.....	42	" 14, "	.....	3	15	Phthisis.
5454	M. E. S....	F.....	45	" 15, "	.....	9	1	Chronic Mania.
3836	W. K.....	M.....	63	" 29, "	11	6	12	Epilepsy.
5315	M. B.....	F.....	56	May 16, "	2	5	13	"
4557	H. W.....	F.. ..	77	" 24, "	7	.....	13	Senile Decay.
5455	M. C.....	F.....	67	June 18, "	1	.....	28	"
4075	M. H. ...	F.....	78	" 25, "	9	11	27	"
5560	J. M.....	M.....	31	July 2, "	.....	6	3	Phthisis.
5481	M. V.....	F.....	40	" 4, "	.....	10	27	Heart Disease.
5027	M. J.....	F.....	30	" 12, "	5	1	26	Epilepsy.
4213	A. M.....	F.. ...	70	" 25, "	9	1	17	Marasmus.
5574	M. C.....	F.....	?	August 14, "	.....	6	24	Phthisis.
3702	C. A.....	F.....	74	" 16, "	12	8	10	Marasmus.
5562	C. C. ...	F.....	29	" 21, "	.....	6	17	Epilepsy.
4497	J. K.....	F.....	57	" 26, "	7	4	15	Phthisis.
5466	J. B. W...	M.....	48	" 27, "	1	1	24	Dysentry.
5649	E. G.....	F.....	51	" 31, "	.....	1	28	Exhaustion.
5490	M. D.....	F.....	66	September 4, "	5	9	5	Heart Disease.
5207	J. C.	M....	74	" 7, "	4	1	3	Exhaustion.
3578	J. L.....	M.....	57	" 9, "	13	6	24	Paralysis.
4684	S. C.....	M.....	30	" 9, "	6	11	19	Phthisis.
5670	W. A. K..	M.....	22	" 13, "	.....	.....	10	Acute Mania.
5496	C. N	F.....	74	" 23, "	1	...	25	Senile Decay.

TABLE NO. 7.

Shewing Trades, Callings and Occupations of Patients admitted into the Asylum.

Trades, Callings and Occupations.	During the Year.			During Former Years.			Total.
	Males.	Females	Total.	Males.	Females	Total.	
Agents	1		1				1
Book-keepers	3		3	17		17	20
Bakers	2		2	14		14	16
Butchers				16		16	16
Blacksmiths	1		1	38		38	39
Brewers	1		1	9		9	10
Builders				3		3	3
Barbers				2		2	2
Brickmakers				3		3	3
Bridge-tenders				1		1	1
Brakesmen				1		1	1
Brushmakers	1		1				1
Commercial travellers				6		6	6
Cabinet-makers				1		1	1
Coopers				15		15	15
Carpenters	1		1	129		129	130
Clerks	4		4	115		115	119
Clergymen	1		1	23		23	24
Cooks					6	6	6
Cigarmakers				5		5	5
Custom-house Officers				3		3	3
Civil Servants				1		1	1
Clock cleaners				1		1	1
Domestic servants, all kinds		8	8	5	892	897	905
Dressmakers		1	1				1
Druggists				12		12	12
Doctors	1		1	13		13	14
Engineers	1		1	16		16	17
Editors				2		2	2
Farmers	18		18	827	26	853	871
Fishermen	1		1				1
Gardeners				4		4	4
Grocers	1		1	3		3	4
Gentlemen				23		23	23
Glove-makers					1	1	1
Gun-smiths				1		1	1
Hostlers				2		2	2
Hunters				1		1	1
Harness-makers				9		9	9
Housekeepers		3	3		246	246	249
Hack-drivers				2		2	2
Inn-keepers				6		6	6
Ironmongers				1		1	1
Jewellers				5		5	5
Janitors				1		1	1
Labourers	25		25	680		680	705
Laundresses					2	2	2
Ladies		9	9		25	25	34
Lawyers				16		16	16
Milliners		1	1		21	21	22
Masons				44		44	44
Machinists				15		15	15
Millers				25		25	25
Moulders				16		16	16
Merchants	1		1	79		79	80
Mechanics	2		2	23		23	25
Music-teachers					1	1	1

TABLE NO. 7.—*Continued.*

Shewing Trades, Callings and Occupations of Patients admitted into the Asylum

Trades, Callings and Occupations.	During the Year.			During Former Years.			Total.
	Males.	Females	Total.	Males.	Females	Total.	
No occupation	3	12	15	107	255	362	377
Nurses					5	5	5
Not stated		10	10	195	279	474	484
Other occupations				44	14	58	58
Professors of Music				7	3	10	10
Pensioners				1		1	1
Photographers				5		5	5
Painters	1		1	27		27	28
Printers				22		22	22
Peddlers	1		1	15		15	16
Railway Foremen				3		3	3
Railway Conductors				1		1	1
Spinsters		8	8		109	109	117
Sailors				24		24	24
Students	1	1	2	15	1	16	18
Sisters of Charity		1	1				1
Shoemakers	1		1	73		73	74
Seamstresses					74	74	74
Soldiers				5		5	5
Salesmen	1		1				1
Sail and tent-makers				1		1	1
Shopkeepers				2	1	3	3
Teachers	1	2	3	47	51	98	101
Tinsmiths				11		11	11
Tailors	4	1	5	63		63	68
Teamsters				5		5	5
Wood-workers				1		1	1
Weavers				12	2	14	14
Wheelwrights	1		1				1
Wives		25	25		582	582	607
Unknown, or other employments		1	1				1
Total	79	83	162	2920	2596	5516	5678

TABLE No. 8.

Shewing Causes of Insanity.

CAUSES OF INSANITY. In respect of the admissions for the year ending 30th September, 1883.	Number of instances in which each cause was assigned.					
	As predisposing cause.			As exciting cause.		
	Male.	Female.	Total.	Male.	Female.	Total.
Moral.						
Domestic troubles, including loss of relatives or friends				2	9	11
Religious excitement				1	1	2
Adverse circumstances, including business troubles				5	1	6
Love affairs, including seduction					1	1
Mental anxiety, "worry"				2	7	9
Fright and nervous shocks						
Physical.						
Intemperance in drink	1		1	3	1	4
Intemperance, sexual						
Venereal disease				1		1
Self-abuse, sexual				21	2	23
Over-work				3	1	4
Sunstroke				2		2
Accident or injury					1	1
Pregnancy					1	1
Puerperal					4	4
Lactation						
Puberty and change of life						
Uterine disorders					1	1
Brain disease, with general paralysis						
Brain disease, with epilepsy		1	1	2	1	3
Other forms of brain disease						
Other bodily diseases or disorders, including old age					2	2
Fevers				2	2	4
Hereditary.						
With other ascertained causes in combination	13	16	29			
With other combined cause not ascertained	11	12	23			
Congenital.						
With other ascertained cause in combination						
With other combined cause not ascertained		1	1			
Not insane				3		3
Unknown				32	48	80
Total	25	30	55	79	83	162

TABLE No. 9.

Shewing the Probational discharges, and the result thereof.

Reg. No.	Sex.	Initials.	Date of Probational Discharge.	Term of Probation.	Result.
5437	M...	A. D.....	October 7, 1882....	November 7, 1882.....	Remained at home.
5468	M...	E. A. T...	" 9, "	" 9, "	" "
5430	F ...	A. H.....	" 23, "	" 23, " ...	" "
5479	F ...	H. M. E. H.	" 31, "	December 1, "	" "
5494	F ...	M. C	November 2, "	" 5, "	" "
5522	F ...	E. J. H....	December 2, "	January 2, 1883.....	" "
5464	M...	H. S.....	" 6, "	" 6, "	" "
5480	F ...	E. M. R...	" 7, "	" 7, "	" "
5430	F ...	M. J. G...	" 7, "	" 6, "	" "
5489	F ...	H. E. A...	" 12, "	" 6, "	" "
5546	M ..	H. M.....	January 20, 1883....	February 20, "	Died January 23, 1883.
5519	F ...	J. E.....	" 25, "	" 25, "	Remained at Home.
5366	F ...	J. B.	" 27, " ..	March 27, "	" "
5545	F ...	M. B. P...	February 21, "	" 21, "	" "
5557	F ...	M. P.....	March 5, "	April 5, "	Returned March 7, 1883.
5477	M...	H. B. S. P.	" 9, "	" 9, "	Remained at Home.
5584	M...	D. C	" 12, "	" 12, "	" "
5548	F ...	C. McC...	" 15, " . ..	" 15, "	" "
5583	F ...	E. H	" 30, " ...	" 30, "	" "
5236	M...	G. G. G. G.	April 2, "	May 2, "	" "
5394	F ...	M. E. H .	May 1, " . ..	June 1, "	" "
5542	M...	P. F	" 4, " ...	" 4, "	" "
5495	F ...	M. McK...	" 23, "	" 23, "	" "
5621	F ...	E. J. W...	June 6, " ...	July 6, "	" "
5622	F ...	S. M	" 7, "	" 7, "	" "
5462	M...	J. P. B....	" 13, "	September 13, "	" "
5460	F ...	M. K.....	July 4, "	July 20, " ...	" "
5483	F ...	L. S.....	" 10, "	August 10, "	" "
5470	F ...	A. McC...	October 30, 1882....	November 30, 1882.....	" "

SUMMARY OF PROBATIONAL DISCHARGES.

	Males.	Females	Total.	Males.	Females	Total.
Number to whom probational leave was granted..	.....	.....	.....	9	20	29
Discharged, recovered.	8	19	27	.....	.....	.....
" improved....	.....	... .	.... ..	.....	.. ....	....
" unimproved.....	.....	.....	.....	.....	.....	.....
Died before expiration of leave....	1	.....	1	.....	.....	.....
Returned to Asylum.....	.....	1	1	.....	....	....
Absent on probation on 30th September, 1883.....	0	0	0	0	0	0

TABLE No. 10.

Shewing the nature of Employment and the number of Day's Work performed by Patients during the year.

Nature of Employment.	Number of Patients who Worked.	Days Worked.		
		Males.	Females	Totals.
Carpenter's Shop	2	398	.....	398
Tailor's Shop	4	805	.....	805
Shoe Shop	.....	.....	.....	.....
Engineer's Shop	3	939	.....	939
Blacksmith's Shop	.....	.....	.....	.....
Mason Work	2	302	.....	302
Repairing Roads	2	480	.....	480
Wood Yard and Coal Shed	6	1878	.....	1878
Bakery	2	730	.....	730
Laundry	9	1252	1305	2557
Dairy	5	939	703	1642
Butcher's Shop and Slaughter House	3	873	.....	873
Piggery	2	626	.....	626
Painting	3	930	.....	930
Farm	20	6260	.....	6260
Garden	4	1252	.....	1252
Grounds	4	1252	.....	1252
Stable	4	1460	.....	1460
Kitchen	9	1460	1827	3287
Dining Rooms	28	5840	4380	10220
Officers' Quarters	4	365	1095	1460
Sewing Rooms	12	.....	3756	3756
Knitting	14	.....	4382	4382
Spinning	1	.....	261	261
Mending	15	.....	4695	4695
Wards	50	10950	7300	18250
Halls	.....	.....	.....	.....
Storeroom	2	313	313	626
General	4	380	.....	380
Total	214	39684	30017	69701

TABLE No. 11.

Shewing Articles made in Sewing Room during the year ending 30th Sept., 1883.

ARTICLES.	Number.	ARTICLES.	Number.
Chemises	509	Aprons	144
Night Gowns	32	Jackets	5
Shirts	524	Drawers, pairs	10
Petticoats	189	Fender Waists	4
Dresses	236	Mattrass Ticks	7
Pillow Cases	1104	Window Blinds	49
Quilts	141	Capes	1
Sheets	138	Collars	18
Rugs	28	Caps	19
Roller Towels	106	Potato Nets	14
Dish do	137	Lambrequins	10
Bed Ticks	113	Mattrasses made over	64
Socks, pairs	852	Table Cloths	75
Stockings, pairs	173	Total	4592

TABLE No. 12.

Shewing Articles made in Tailor's Shop during the year ending 30th Sept., 1883

ARTICLES.	Number.	ARTICLES.	Number.
Coats made	82	Mattrasses	92
Vests do	61	Carpets	2
Pants do	114	Coats repaired	900
Caps do	50	Vests do	92
Braces, P. W.	60	Pants do	780
Tweed Suits	2	Rugs do	4
Denine Suits	5	Untidy Suits repaired	42
do Pants	22	Untidy Suits, Tweed, repaired	2
Untidy Suits, Linen	5		
do Tweed	2	Total	2315

TABLE NO. 13.

Return of Farm and Garden Produce for Year ending 30th September, 1883. Asylum for the Insane, Toronto.

——	Quantities.	Rate.	Value.
		$ c.	$ c.
Asparagus	2600 bunches	6	156 00
Artichokes	8 bushel	60	4 80
Apples	77 bbls	2 25	173 25
Beet, blood	250 bushel	40	100 00
Beans	72 do	60	43 20
Carrots, red	350 do	30	105 00
do white	10 ton	7 00	70 00
Cucumbers	356	2	7 12
Cauliflowers	499 heads	8	39 92
Celery	4000 do	5	200 00
Currants	14½ bushel	2 00	29 00
Cherries	2 do	1 50	3 00
Cabbage	8000 heads	5	400 00
Corn, sweet	700 dozen	10	70 00
Cress and Mustard	113 bunches	5	5 65
Capsicums	½ bushel	2 00	1 00
Grapes	525 lbs	5	26 25
Gooseberries	2½ bushel	3 00	7 50
Hay	56 ton	14 00	784 00
Lettuce	5880 bunches	4	235 20
Mangolds	150 tons	7 00	1050 00
Oats	1500 bushel	41	615 00
Onions, green	7200 bunches	3	216 00
do ripe	139 bushel	75	104 25
Peas in pod	35 do	40	14 00
Potatoes	1800 do	64	1152 00
Parsley	645 bunches	2	12 90
Parsnips	700 bushel	40	280 00
Radishes	300 bunches	3	9 00
Rhubarb	5050 do	3	151 50
Raspberries	128 quarts	6	7 68
Strawberries	234 do	6	14 04
Salsify	20 bushel	60	12 00
Spinach	123 do	40	49 20
Straw	50 ton	10 00	500 00
Summer Savery	100 bunches	3	3 00
Sage	60 do	5	3 00
Turnips	2 ton	8 00	16 00
Tomatos	200 bushels	1 00	200 00
Flower Seeds			40 00
Bulbs	796		26 40
Plants	3475		347 50
Fowls, by breeding	60		19 20
Eggs	643 doz	20	128 60
Milk	16472 gals	24	3953 28
Heifers, matured	2	val. increase	40 00
Calves, sold	17	75	12 75
Colt, 2 year old	1	val. increase	250 00
do 1 do	1	do. do	50 00
Hogs sold	10253 lbs	5¾	589 54
do killed for use	11808 do	7	826 56
do fattened stock	41		160 00
Green feed grasses	166 loads	60	99 60
do western corn	350 do	1 00	350 00
Total			13763 89

TABLE No. 14.

PERIODS.	Duration of insanity prior to admission.	Length of residence of those remaining in Asylum on 30th September.	Periods of treatment of those who were discharged cured during the year.	Periods of treatment of those who were discharged improved during the year.	Periods of treatment of those who were discharged unimproved during the year.
Under 1 month	56	9	6	..	1
From 1 to 2 months	23	9	6	..	2
" 2 " 3 "	11	9	7	2	2
" 3 " 4 "	13	11	10	2	3
" 4 " 5 "	6	9	6	3	..
" 5 " 6 "	4	8	7	..	1
" 6 " 7 "	5	5	6	..	..
" 7 " 8 "	4	11	3	..	1
" 8 " 9 "	2	6	5	..	
" 9 " 10 "	3	5	1	1	..
" 10 " 11 "	2	7	..	1	..
" 11 " 12 "	2	8	2	1	1
" 12 " 18 "	5	41	2	1	1
" 18 months to 2 years	3	15	2	..	1
" 2 to 3 years	5	26	..	..	..
" 3 " 4 "	4	29	1	..	1
" 4 " 5 "	3	27	1	..	..
" 5 " 6 "	5	63	..	..	..
" 6 " 7 "	..	47	..	..	..
" 7 " 8 "	..	71	..	..	1
" 8 " 9 "	..	24	..	..	..
" 9 " 10 "	..	23	..	..	..
" 10 " 15 "	..	77	..	..	..
" 15 " 20 "	1	52	..	..	..
" 20 years and upwards	2	111	..	..	..
Not insane	3	..	..	..	..
Totals	162	703	65	11	16

ASYLUM FOR INSANE, LONDON.

October 1st, 1883.

To the Inspector of Prisons and Public Charities, Toronto, Ontario.

Sir,—I have the honour to transmit to you herewith the Thirteenth Annual Report of this Asylum.

There were in residence at this Asylum on the 1st of October, 1882, 906 patients, of whom 455 were men and 451 women. In the course of the year just closed there have been admitted to the Asylum 145 patients, of whom 73 were men and 72 women, making the total number of patients under treatment during the year, 1,051,—528 men and 523 women. Of these patients 74 have been discharged, 40 men and 34 women; 55 have died, 34 men and 21 women; 2 have eloped, both men; 25 have been transferred to Hamilton Asylum, 12 men and 13 women; leaving in residence at present 895 patients 440 men and 455 women.

Of the 74 patients discharged, 44, 26 men and 18 women, were discharged recovered; 19,—10 men and 9 women were discharged improved; and 11,—4 men and 7 women, were discharged at the desire of their friends, unimproved.

The number of patients discharged recovered and improved was 63, or 43·45 per cent. of the admissions.

The total number of patients under treatment during the year was 1,051, and the number of deaths 55, so that the death rate for the year was 5·23 as against 4·95, 3·92, 4·76, 4·91, and 5·1 for the five preceding years, counting backwards. The deaths were all natural, and due to unpreventable causes, such as old age, phthisis, and diseases of the nervous system associated with the patient's insanity. By reference to the table in Appendix it will be seen that a large number of the patients who died during the year were old people; not less than 19 of them were over 60, and 14 were over 70 years of age: the average age of all the patients who died at the Asylum during the year was 52·64 years.

Repairs and Improvements made.

Perhaps more alterations and renewals have been effected at the Institution this year than ever before in an equal period of time. The most important of them are the following:—

1. We built a new green-house, 76 feet long by 11 wide, and a shed 12 x 12 ft. at its entrance, and fitted it up with hot water and furnace pipes.

2. For the sake of removing the pigs from the immediate neighbourhood of the Asylum, and also because the old pens were falling down from age we built a new pen 200 feet long by 14 feet wide, as far as possible from the Asylum Buildings, moved the pigs to it, and pulled down the old pens.

3. We moved the slaughter house and fasting house to the neighbourhood of the new pig pen, dug a well there, bricked it up, and put the moved and re-constructed slaughter-house in good order in all respects.

4. We built a stable at the Bursar's house, 18 x 24 feet, also a wood and coal shed, 14 x 33 feet, and built a new verandah and porch to the Bursar's house.

5. We took down over 1,500 feet of old fence where not wanted, and put up over 1,600 feet about the new pig yard and other places.

6. We straightened up 1,100 feet of main outside fence of the Asylum, which was almost falling down.

7. In the course of the year we have re-arranged, according to a plan submitted to the Public Works Department last year, all the windows of the Main Asylum, (with the exception of a few in the centre building), to the number of 506 windows.

8. The fire engines and apparatus of all kinds have been thoroughly over-hauled and examined, and are ready for use at a moment's notice.

9. The Public Works Department have built a brick coal shed, 103 x 25 feet, back of the Refractory Asylum, to hold the coal to be used in that building.

(10.) They have also begun and are proceeding with a handsome and suitable building for religious purposes, 75 x 33 feet, (brick building on stone foundation trimmed with cut stone.) It is to be completed by the beginning of next year, and is intended to seat 450 persons.

(11.) We have replaced ten wooden bath room floors, which were rotting, with brick and cement.

(12.) We replaced the two floors in the patients' dining rooms in the basement of the Refractory Branch, (which were rotting), with cement floors.

(13.) We have built, back of the Refractory Branch, a tank six feet in diameter and seven feet deep, to hold rain water for the use of the steam boilers at that part of the Institution.

(14.) We have put in a large water boiler at the North Cottage, as an improvement on our previously constructed hot water heating apparatus at that Cottage.

(15.) The Public Works Department have placed a supplementary pump in the pump house at the main well, so that in case of accident to main pump the Institution could be supplied with water.

(16.) The main pump has been taken out, thoroughly overhauled and repaired and returned to its place.

(17.) The Laundry engine has been taken out, overhauled and repaired and replaced.

(18.) The West boiler house pump has been taken out, repaired and refitted.

(19.) A larger amount of painting than usual has been done at the Asylum, and the building is in a better state in this respect than ever before ; many halls have been fresh painted during the year, and the 506 windows mentioned above have been painted, sashes and frames, inside and out.

Alterations Recommended.

(1). The East and West Cottages should be heated with hot water, as the North Cottage now is. It is cheaper to heat with hot water than with baseburners, and the buildings could be much better heated by the former than by the latter method.

(2.) The steam heating of the Main Asylum should be thoroughly re-organized and re-arranged.

(3.) A coal shed similar in all respects to those at the North and East Cottages, is urgently needed at the West Cottage.

(4.) We want a second waggonette as the staff has become so large that there is not room in the waggonette we have for all the female employees off duty to ride in it to Church on Sunday morning.

(5.) We want a large hay shed, at present the greater part of our hay has to be stacked.

(6.) Our laundry, and especially our dining room, require to be enlarged, re-constructed, and better ventilated.

(7.) A suitable entrance-porch should be built at the front of the main Asylum.

(8.) Above all we want a large building to be used as a workshop by the male patients. This seems to me to be a necessity, if all the male patients are ever to be got to work. The workshop would be used for all sorts of indoor work, such as shoemaking, making and mending chairs, mat making, willow work, sewing, knitting, etc., etc.

It is not possible to look after the patients so as to keep them at work while they are scattered about the corridors, and most kinds of work make too much dust or litter, or both to be carried on in the interior of the Asylum ; neither is there room enough in the present building to carry on work in it on a large scale ; it is in fact all used as a house and is not available as a workshop.

(9.) I am anxious that a competent landscape gardener should be sent to this Asylum for the purpose of making plans for the improvement of our grounds, which plans we would gradually work to from year to year.

Although the ornamental grounds here are at present very fine, there is doubt that they might be greatly improved, and no reason whatever why they should not be so.

(10.) The roofs of all five Asylum Buildings leak more or less ; they should all be attended to at once ; in this connection I wish to call your attention to the fact that there

is no adequate provision at present for keeping in repair the various buildings at this Institution, which has now almost reached the magnitude of a town. A thorough and competent officer should be placed here for the purpose, and he would find plenty to occupy him ; the relations of this officer to the carpenter, engineer, etc., etc., of the Asylum staff would be a matter of detail to be arranged ; at present the Medical Superintendent is supposed to keep oversight of the buildings themselves as well as of the internal economy of *them*, the farm, garden grounds, repairs of all kinds, besides having care, medical and otherwise of nine hundred patients ; but no one man can keep in his mind and manage intelligently so many and such diverse details, and some such officer as I speak of must, sooner or later, be appointed.

(11.) The gardener's house requires to be raised and a new foundation placed under it ; the old sills and joists are rotten, and the house is not sufficiently raised above the ground to be healthy ; four cases of typhoid fever have occurred in this house within the past four years. and the repairs that I mention are urgently needed,

(12.) The floors at the main Asylum which are not already covered with hard wood ought to be so at once ; the old soft wood floors are becoming much worn, many of them are cut through, others almost cut through by the bed castors.

Employment and Restraint.

The record of restraint for the year just closed is as follows :—

Female Restraint.

October :—Seclusion—No. of hours in		11¾
Restraint Bed	"	73½
Restraint Chair	"	101
Muffs	"	6¾
Total No. of hours' restraint		186¼
" cases restrained		8
November :—Seclusion—No. of hours in		4½
Restraint Bed	"	48
Restraint Chair	"	16
Total No. of hours' restraint		68½
" cases restrained		9
December :—Seclusion—No. of hours in		2
Muffs	"	8
Total No. of hours' restraint		10
" cases restrained		3
January :—Seclusion—No. of hours in		4
Total No. of hours' restraint		4
" cases restrained		4
March :—Seclusion—No. of hours in		3¾
Total No. of hours' restraint		3¾
" cases restrained		3
April :—Seclusion—No. of hours in		¾
Total No. of hours' restraint		¾
" cases restrained		1
June :—Muffs—No. of hours in		6
Total No. of hours' restraint		6
" cases restrained		1

MALE RESTRAINT.

November :—Wristlets—No. of hours in	20
Total No. of hours' restraint	20
" cases restrained	1

No restraint or seclusion has been used during the last three months, and very little for seven months before that time. I feel satisfied that in future no restraint or seclusion will be employed at this Institution, except, perhaps, in surgical cases; (the only restraint used on the male side during the last year, was employed to prevent the patient interfering with a wound).

Along with this disuse of restraint and seclusion, we have almost entirely ceased using strong dresses, of which, up to within the last few months, we were in the habit of using a large number, and although we now use no restraint or seclusion, and hardly any strong dresses, we have less tearing of clothes and bedding and breaking of furniture, etc., and far less striking and fighting on the part of the patients than when restraint and strong dresses were freely used. It should also be mentioned that we use absolutely no sedatives of any kind, and it is very seldom indeed that any patient is held or restrained even for a few minutes at a time by the hands of attendants. This last fact was a very surprising one to me, for I had always believed that when mechanical restraint was discontinued in any Asylum, manual restraint had to be substituted for it, and the chief argument which I have in former times used and heard used against the discontinuance of mechanical restraint, has always been that it was much preferable to restraint by the hands of an attendant, always wrongly taking it for granted that where the former was not used the latter must be.

I attribute the success I have had in the disuse of all forms of restraint almost entirely to the advances we have lately made in the employment of patients. At the present time, with an average of about eight hundred and eighty patients in actual residence, the average number at work is about six hundred and twenty-five, leaving (on working days), only about two hundred and fifty-five doing nothing, this latter number of course including all those who are ill in bed or who from extreme old age or physical weakness are unable to do anything; this brings the number of idle people to be looked after down to a very small figure; and besides, especial pains is always taken (and usually with success) to get the noisy and violent patients to occupy themselves at some kind of work. And I have always found that no odds how violent a patient is, if you can once get him or her to work the case will give you very little further trouble in that way. The employment or occupation of patients need not necessarily be labour of any kind; it may be simply amusement, but I have not included this form of occupation in my figures, neither do I believe that it compares at all in importance to actual work.

It is well, however, to have as large a range as possible of amusements for the patients, both as a change and relaxation for those who work, and also as an occupation for those who will not work, and I have given a good deal of attention to this matter. But my principal endeavour has been in the first place to find suitable work for the patients, and in the second place to get them to engage in it. As regards the work already found for the patients the following list of the various employments engaged in during the past year, will show what has been done in that direction.

The male patients have been engaged in all the various kinds of farm and garden work; they work with the carpenter, mason, painter, tailor, engineer, baker and butcher; they work in the horse and cow stables, and do most of the milking; they assist in the dining-rooms, kitchen and laundry; they sew, knit, make and mend shoes, boots and slippers; seat chairs with cane and reed; make mats; they do tinsmithing, blacksmithing, locksmithing, upholstering, clerking, all kinds of work on the halls, as bed-making, sweeping, scrubbing; sawing and splitting wood, shovelling coal, grading land, making roads, feeding and tending two hundred pigs, working in the store, picking hair for matresses, and doing all sorts of odd jobs. The female patients are largely engaged in sewing and knitting, and besides they work in the kitchen, laundry and dining-rooms; do all sorts of

work on the halls, as bed-making, sweeping and scrubbing; milk, pick hair for matresses, and gather fruit and vegetables in the gardens.

But the list is not yet large enough, for I have still a number of patients who cannot be induced to engage in any of the kinds of work mentioned; and it is my belief that every patient, who is physically able, would work if the right kind of work were offered him. As to the second point, viz., getting the patients to engage in the work, a good deal of management is required. Of course the patient cannot be forced or driven to work; neither, if this were possible, would it be desirable, since work done under compulsion would hardly produce the beneficial effect of voluntary labour. All means short of compulsion, however, are used; privileges are given to patients who work, and withheld from those who do not work, and patients are asked and persuaded to work.

Also, patients who positively refuse to do anything are sometimes sent out with working parties to the fields, garden, etc., and not unfrequently such patients, after being so sent out, work well.

As stated above I am convinced from the experience I have now had that all patients who have the necessary physical strength can be got to work if the right work is found, and the proper method to get them to work is employed.

I believe this because, 1st, in certain Asylums, such as Woodilee, all, or nearly all, the patients physically able, actually do work, and what can be done with one set of several hundred lunatics can be done with another set. 2nd. In this Asylum the (apparently) most hopeless patients have been got to work steadily and well. And 3rd. Nearly all my female patients work, though they are certainly as much incapacitated by their disease as are the men, of whom a much smaller proportion have been induced to labour; but it is easier to provide indoor work for women than for men, and suitable outdoor employment cannot be had for every case, nor is it available in sufficient quantity at all times of the year.

The chief advantages I have found from the employment of patients are these: 1st. It certainly has a tendency to recover the patient of his insanity, and I suppose this tendency is due to the fact that work (however simple) forces the mind, more or less, to dwell on realities, and therefore necessarily induces, (or at least tends to induce) healthy thoughts and healthy mental action to the exclusion of morbid thoughts and morbid mental action. 2nd. If the case is incurable, or until the patient recovers, work makes the time pass far more pleasantly, the patient is much happier, and (the need of movement being satisfied by the work) there is much less fighting, tearing, breaking and mischief of all kinds than when the patients are unemployed. 3rd. The properly directed labour of a large proportion of the patients must necessarily reduce the cost of maintenance, or, if it does not, it will provide comforts and luxuries for the patients that they would not otherwise have.

Female Attendants in Male Halls.

An important innovation made at this Asylum during the year just closed consists in the employment of female attendants in the male halls. So far, three women only have been employed in this manner, but the success of the experiment has been so marked that my present inclination is to extend it. The women are all widows. The qualities I have sought for in selecting them are principally pleasant manners, industrious habits, good feeling, and, above all, good sense. I have had no difficulty in finding such women as I required. The first one was employed on the 25th January, and the other two on the 1st April. One of them is now the Supervisor of the upper or third flat. She does all the work that a man in that position would do, and besides that, she has a general supervision over the tidiness and cleanliness of the whole wing; the other two women act as her assistants on the other two flats: they look after the men's clothing, see to the tidiness of the beds, cleanness of the floors, etc., etc., and especially they oversee the indoor work of a large number of male patients who pick hair, sew, knit, make mats, etc., etc.

But the active duties of these women, though important, are scarcely so valuable as is their mere presence on the halls, which has a strong tendency to check improper and unseemly talk and conduct, so that these halls are different places now from what they

used to be before these women took service in them. Most people would think that it would be simply impossible for three women to live among two hundred and fifty insane men, but it has not proved so. Down to the present time none of these women have been, by speech or action, either injured or insulted by any patient. Almost universally the patients like to have them amongst them, and I find that often the women can get the patients to work when the male attendants can get them to do nothing.

Amusements.

As already stated, I believe fully in the great importance of work as a curative agent, and next to work, and supplementary to it, I would place amusements. The great thing is to do away either altogether, or as completely as possible, with the horrible torpor and languor that, unless prevented, inevitably tend to settle upon Asylum life, and develop it in darkness second only in intensity to that of the grave itself. It is one thing to provide the means of amusement, and another to induce the patients to avail themselves of them. This last depends largely upon the members of the Medical Staff. If they do not inspire the Chief Attendants and Attendants with the requisite views and feelings in this regard there is apt to be nothing done; if, however, they take the matter up in earnest all is likely to go well. I am happy to say that this Institution is well off in this respect; the members of the Medical Staff do all that could possibly be expected of them, and, as a rule, their directions are well carried out by the Chief Attendants and Attendants. The amusements for the year just closed have been as follows: 1st. Those provided for the male patients—weekly dances, weekly entertainments, a weekly singing class, cards, chess, draughts, bagatelle, billiards, tenpins, backgammon, reading, music, walking in the grounds, cricket, sleigh-riding, attending a circus. 2nd. Those provided for the female patients—weekly dances, weekly entertainments, weekly singing class, cards, chess, draughts, backgammon, reading, music, walking in the grounds, playing croquet, sleigh-riding.

The weekly entertainments for the year were as follows, they were provided gratuitously by the various persons mentioned, who are entitled to, and to whom we offer, our best thanks:

1. A variety entertainment by Messrs. Clark, McAuliff, Bremner, Lathrop and others.
2. A musical and literary entertainment by Mr. W. C. Furness and others.
3. A concert by Mrs. Cruickshanks and others, assisted by Mr. Hiscott and the 7th Battalion Band.
4. A concert by the choir of St. Andrew's Church under the management of Mr. Freeland.
5. "Ali Baba, or the 39 Thieves," by the Asylum Dramatic Club.
6. A musical entertainment, under the management of Mr. C. F. Colwell.
7. A concert by Mrs. Cruickshank and others.
8. A concert by the 7th Fusilier Band, under the management of Mr. Hiscott.
9. An entertainment by the "Original Crusty Minstrels."
10. A concert under the management of Dr. Verinder.
11. A concert by the Pall Mall Street Church Choir.
12. A variety entertainment by Messrs. Chadwick, Dalton, Clark, Bremner and others.
13. "A Breach of Promise Case," by Messrs. Morphy, Tennant and others.
14. Variety entertainment by Thomas Gillean and others.

Disuse of Alcohol.

During the year just closed, no alcohol in any form has been prescribed at this Asylum either in sickness or health. This is the second year during which our nine hundred patients have been total abstainers, and so far I have seen no case in which the administration would have been beneficial. I am more and more satisfied that the use of alcohol either in sickness or in health is always a mistake and often a fatal one.

Sunday Services and New Chapel.

During the year we have had religious services every Sunday morning in the amusement room. All the Protestant clergymen in the city have, in turn, conducted these services. For this addition to their usual work, they have received no pecuniary reward.

It has apparently been sufficient reward to them that they have aided in lightening the burden of life for nine hundred afflicted fellow creatures.

The disuse of all forms of restraint, and the employment of so large a proportion of the patients in the Asylum has been accompanied by, (or has caused), an unmistakable elevation of the tone of life throughout this whole Institution, and as one evidence of the fact I may mention that the Sunday attendance at Chapel has nearly doubled during the year just closed; a year ago the average attendance at divine service on Sunday morning was about two hundred and sixty,—it is now over four hundred.

In this connection I may mention the very great satisfaction I feel in the fact that at present a chapel is in process of being built in which to hold these services.

The advantages of having a building solely for religious purposes will be very great. In the first place over four hundred people, many of them old and infirm will be saved climbing up three flights of stairs every Sunday morning, and many who cannot attend service now, because they are unable, by reason of age or feebleness, to mount tho stairs, will be able in future to do so. In the second place the incongruity of having religious services in a room devoted to dancing and theatrical entertainment, which has been deeply felt by many of the patients, will in future be avoided. And, in the third place, I hope, with the new Chapel we shall be able to have Catholic as well as Protestant services; and as a large number of our patients are Catholics I look upon this as a matter of considerable importance.

Farm and Garden.

In this part of the country the present year has been very unfavourable to farming and gardening operations. We have probably done fully as well as our neighbours, but that is not saying much for our crops. The summer was exceptionally cold and wet, rain fell in this neighbourhood on no fewer than fifteen days in June, and 17 days in July. Our farm, though mostly high, rolling and well drained, was, great part of the summer a vast mud hole. Large ponds lay in many of the fields a good part of the summer, and we were prevented from cultivating our potatoes by the fact that the ground was so soft that horses could not walk upon it. We had a good crop of strawberries and raspberries, currants and gooseberries. But the tree fruits were almost a total failure. We have no apples or plums, and not many pears. No melons. The yield of vegetables is a little below the average. The flowers never did so badly; the verbenas and geraniums scarcely grew at all after they were put out in the spring, and they were killed by frost a month earlier in the autumn than usual. On the farm the hay crop was good; we cut and saved in excellent order 173 tons. Our oats also did well; we had 1,325 bushels on twenty-five acres, *i.e.*, fifty-three bushels to the acre. Our potatoes were a failure, as they were throughout this part of the province. We expected to have had six thousand bushels, but actually had barely two thousand, and those small and of poor quality. Of wheat we had 285 bushels on fifteen acres—nineteen bushels to the acre, which was a much better crop than the average in this neighbourhood. Carrots will be a good crop, mangels and corn sown for fodder, about half a crop. We killed, during the year, 27,472 lbs. of pork.

Officers and Employees.

Part of the recommendation made in my last annual report was adopted, and the wages of Female Attendants raised from $10 to $12 a month; of Female Supervisors rom $12 to $14 a month. Also the wages of housemaids was raised from $8 to $9 a month. I still think other increases will be necessary, and that they ought to be made at once. I am satisfied that there are several places which could not be refilled at the present rate of wages.

It affords me much pleasure to state in conclusion that throughout the year the employees generally have done their work faithfully and well, and that the officers of the Institution have, without exception, fulfilled in a most exemplary manner the several duties devolving upon them.

I have the honour to be,

Sir,

Your obedient servant,

R. M. Bucke,

Medical Superintendent.

ANNUAL STATISTICAL REPORT

Of the Operations of the Asylum for Insane, London, for the Year ending 30th September, 1883.

TABLE No. 1.

Showing movements of Patients in the Asylum for the Official Year ending 30th September., 1883.

	Male.	Female.	Total.	Male.	Female.	Total.
Remaining October 1st, 1882	.....	.....	.....	455	451	906
Admitted during year :						
By Lieutenant-Governor's Warrant	27	16	43			
" Medical certificate	46	56	102	73	72	145
Total number under treatment during year	.....	.....	.....	528	523	1,051
Discharges during year :						
As recovered	26	18	44			
" improved	10	9	19			
" unimproved	4	7	11			
Total number of discharges during year	40	34	74			
Died	34	21	55			
Eloped	2	.....	2			
Transferred	12	13	25	88	68	156
Remaining in Asylum, 30th Sept., 1883	.....	.....	.....	440	455	895
Total number admitted since opening of Asylum	.....	.....	.....	1,187	1,123	2,310
" discharged	404	400	804			
" died	279	214	493			
" eloped	32	7	39			
" transferred	32	47	79	747	668	1,415
" remaining, 30th Sept., 1883	.....	.....	.....	440	455	895

TABLE No. 2.

Showing the maximum and minimum number of patients resident in the Asylum the total number of days' stay of patients, and the daily average number of patients in the Asylum, from the 1st October, 1882, to 30th September, 1883.

	Male.	Female.	Total.
Maximum number of patients in residence (on the 26th of October, 1882)	458	454	912
Minimum number of patients in residence [on the 5th of November, 1882	446	438	884
Collective days' stay of all patients in residence during year	162,089	165,447	327,536
Daily average population	44,407½	45,327½	89,735

	Admissions of Year.			Total Admissions since Opening.		
	Male.	Female.	Total.	Male.	Female.	Total.
Social State.						
Married	26	43	69	480	652	1,132
Widowed	5	9	14	27	55	82
Single	41	20	61	674	415	1,089
Not reported	1	.....	1	6	1	7
Total	73	72	145	1,187	1,123	2,310
Religion.						
Presbyterians	21	15	36	238	233	471
Episcopalians	16	15	31	264	214	478
Methodists	14	19	33	228	251	479
Baptists	5	7	12	82	89	171
Congregationalists	.....	1	1	13	7	20
Roman Catholics	7	10	17	204	220	424
Mennonites	.....	.....	.....	3	.....	3
Quakers	.....	.....	.....	8	1	9
Infidels	3	.....	3	23	8	31
Other denominations	2	2	4	53	51	104
Not reported	5	3	8	71	49	120
Total	73	72	145	1,187	1,123	2,310
Nationalities.						
English	12	8	20	179	136	315
Irish	8	10	18	211	266	477
Scotch	7	9	16	124	120	244
Canadian	38	37	75	532	495	1,027
United States	4	4	8	61	34	95
Other Countries	2	2	4	30	38	68
Unknown	2	2	4	50	34	84
Total	73	72	145	1,187	1,123	2,310

TABLE No. 3.

Shewing the Counties from which patients have been admitted up to 30th September, 1883.

COUNTIES.	Admitted During Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Algoma District				1	2	3
Brant				38	33	71
Bruce	5	2	7	61	46	107
Carleton				4	7	11
Dufferin						
Elgin	4	5	9	67	77	144
Essex	3	5	8	53	49	102
Frontenac				5	7	12
Grey				9	12	21
Haldimand				22	23	45
Halton				9	6	15
Hastings				5	8	13
Huron	5	7	12	85	91	176
Kent	6	7	13	60	83	143
Lambton	11	11	22	113	79	192
Lanark		1	1	2	3	5
Leeds and Grenville					5	5
Lennox and Addington				3	1	4
Lincoln				10	6	16
Middlesex	19	21	40	240	221	461
Muskoka District						
Norfolk				29	34	63
Northumberland and Durham				14	10	24
Ontario				6	13	19
Oxford	10	3	13	99	72	171
Peel				4	5	9
Perth	7	9	16	72	65	137
Peterborough				1	5	6
Prescott and Russell				2	3	5
Prince Edward				1	1	2
Renfrew						
Simcoe				13	21	34
Stormont, Dundas and Glengarry				5	5	10
Victoria				12	14	26
Waterloo				33	23	56
Welland				8	6	14
Wellington	2	1	3	20	15	35
Wentworth				11	17	28
York				45	45	90
Not classed	1		1	25	10	35
Total admissions,	73	72	145	1187	1123	2310

TABLE No. 4.

Showing the length of Residence in the Asylum of those discharged during the year.

No.	Initials.	Sex.	When Admitted.	When Discharged.	Remarks.
1	J. H. E...	M.....	July 8, 1882	October 2nd, 1882....	Unimproved.
2	M. M.....	F.....	Feburary 9, 1882	" 3rd, "	"
3	M. H.....	F.....	February 25, 1882	" 5th, "	Recovered.
4	C. McC...	F.....	December 12, 1881.....	" 19th, "	Improved.
5	M. E.....	F.....	March 22, 1882	" 30th, "	Recovered.
6	J. M.....	M.....	March 8, 1882.....	November 1st, "	Improved.
7	A. McG...	F.....	October 13, 1881.....	" 2nd, "	Recovered.
8	M. H	M.....	July 28, 1881	" 3rd, "	"
9	J. H. J ...	M.....	November 3, 1880.....	" 13th, " .	Improved.
10	W. B.....	M.....	October 13, 1881.....	" 20th, "	Unimproved.
11	J. J. S....	M.....	August 5, 1882	" 24th, "	Recovered.
12	M. T.....	F.....	February 17, 1882.....	" 30th, "	Improved.
13	A. McL...	F.....	July 31, 1882	December 2nd, "	"
14	S. S.....	M. ...	June 14, 1881.....	" 7th, " ...	Recovered.
15	M. A. B...	F.....	April 25, 1882.....	" 11th, "	"
16	W. H. R..	M.....	August 16, 1882.....	" 13th, "	Unimproved.
17	J. W.....	M.....	August 25, 1882	" 14th, "	Recovered.
18	G. P	M.....	October 7, 1880	" 20th, "	Improved.
19	W. T	M. ..	August 26, 1882.....	January 12th, 1883 ...	Recovered.
20	J. W. S....	M.....	August 31, 1882	" 12th, "	"
21	W. B.....	M.....	July 4, 1882.....	" 19th, " ...	"
22	R. M. W..	F.....	July 19, 1882	" 20th, "	Unimproved.
23	D. B.....	M.....	December 12, 1882.....	February 2nd, " ...	"
24	H. McB ..	M.....	July 7, 1882.....	" 15th, " ...	Recovered.
25	J. S	M.....	April 5, 1882.....	" 16th, "	"
26	A. L	M.....	Nov. 6, 1882.....	" 23rd, "	"
27	M. A. C ..	F.....	June 28, 1882.....	" 24th, "	"
28	C. S.....	F.....	October 16, 1882 ..	March 2nd, "	Unimproved.
29	J. W.	M.....	September 30, 1882	" 5th, "	Recovered.
30	M. A. E...	M. ...	October 23, 1882	" 5th, "	"
31	D. M	M.....	October 11, 1882.....	" 15th, " ...	"
32	J. B	M.....	December 23, 1882..	" 15th, "	"
33	A. R. D'L.	M. ...	March 7, 1882.....	" 15th, "	"
34	E. P.....	F.....	March 29, 1881	" 22nd, "	Improved.
35	R. F.....	M.....	February 17, 1883.....	" 26th, " ...	Recovered.
36	E. B.....	F.....	February 18, 1879	" 28th, "	"
37	E. M	F.....	October 17, 1882.....	" 30th, "	Unimproved.
38	E. S.....	F.....	December 14, 1881.	April 9th, "	Recovered.
39	M. D.....	F.	April 25, 1882.....	" 16th, " ..	Improved.
40	M. McK...	M. ...	October 26, 1882.....	" 19th, "	Recovered.
41	M. S	F.....	December 5, 1882.....	" 21st, "	"
42	A. B.....	F.....	January 14, 1882	" 21st, "	"
43	A. R	F.....	November 15, 1882.....	" 24th, "	"
44	K. M	F.....	October 21, 1882.....	" 26th, "	"
45	J. R	M.....	November 10, 1882.....	" 27th, "	"
46	E. D.....	F.....	May 16, 1881	May 10th, "	Improved.
47	R. B.....	M.....	December 3, 1879	" 10th, "	"
48	E. E.....	F.....	August 5, 1877	" 18th, "	Unimproved.
49	T. McM...	M.....	May 10, 1882.....	June 11th. "	Recovered.
50	E. C.....	F.....	March 12, 1883.....	" 13th, "	Unimproved.
51	M. A. C ..	F.....	August 12, 1879.....	" 15th, "	Improved.
52	M. J. H ..	F.....	September 15, 1881	" 21st, "	"
53	L. S	M. ...	November 29, 1882.	" 23rd, " ...	Recovered.
54	W. H.....	M.....	March 12, 1883	" 27th, "	"
55	J. H.....	F.....	April 5, 1883	July 4th, "	"

TABLE No. 4.—*Continued.*

Showing the length of Residence in the Asylum of those discharged during the year.

No.	Initials.	Sex.	When Admitted.	When Discharged.	Remarks.
56	J. S	M.....	July 28, 1881.....	July 11th, 1883....	Recovered.
57	V. F	F.....	June 10, 1881.....	" 13th, "	"
58	M. A. W..	F.....	February 7, 1883	" 17th, "	"
59	W. J. G ..	M.....	March 30, 1883.....	" 23rd, " .. –	"
60	T. C	M.....	July 14, 1883	" 25th, "	Improved.
61	F. B	M.....	August 25, 1882.....	" 27th, "	Recovered.
62	S. E. P ..	F.....	March 7, 1883.....	August 1st, "	Unimproved.
63	R. J.....	M.....	May 30, 1882.....	" 4th, "	Recovered.
64	E. A. C ..	F.....	April 6, 1883	" 14th, "	"
65	C. M	F.....	December 28, 1882.....	" 17th, "	Improved.
66	G. R.....	M.....	March 5, 1883.....	" 28th, "	"
67	E. T	F.....	March 1, 1883.....	September 8th, "	Recovered.
68	S. C.....	F.....	August 17, 1881.....	" 8th, "	"
69	J. S.....	M.....	February 27, 1883	" 10th, "	Improved.
70	L. E. T....	M.....	November 20, 1878	" 11th, "	"
71	W. S.....	M.....	January 29, 1883	" 21st, "	"
72	W. H. R..	M.....	July 13, 1883	" 22nd, "	Recovered.
73	I. I.....	M.....	February 19, 1881.....	" 24th, "	Improved.
74	E. K.....	M.....	June 21, 1881.....	" 30th, "	Recovered.

TABLE No. 5.

Shewing the Counties from which warranted cases have been admitted up to 30th September, 1883.

COUNTIES.	Admitted During Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Algoma District				1		1
Brant				19	11	30
Bruce	1		1	29	16	45
Carleton					2	2
Dufferin						
Elgin	3		3	19	9	28
Essex	3	2	5	28	13	41
Frontenac					1	1
Grey				8	7	15
Haldimand				10	3	13
Halton				6	3	9
Hastings				2	5	7
Huron		2	2	38	25	63
Kent	1		1	24	9	33
Lambton	6	5	11	69	25	94
Lanark					1	1
Leeds and Grenville						
Lennox and Addington				1		1
Lincoln				8	1	9
Middlesex	3	5	8	64	45	109
Muskoka District						
Norfolk				21	11	32
Northumberland and Durham				4	2	6
Ontario				1	5	6
Oxford	4	1	5	43	16	59
Peel				3	4	7
Perth	4		4	32	12	44
Peterborough				1	5	6
Prescott and Russell				1	1	2
Prince Edward					1	1
Renfrew						
Simcoe				5	8	13
Stormont, Dundas and Glengarry				1		1
Victoria				9	9	18
Waterloo				17	8	25
Welland				3	4	7
Wellington	2	1	3	13	11	24
Wentworth				6	9	15
York				27	24	51
Not classed						
Total admissions	27	16	43	513	306	819

TABLE No. 6.

Showing age, length of residence, and proximate cause of death of those who died during the year ending 30th September, 1883.

No.	Initials.	Sex.	Age.	Date of Death.	Residence in Asylum.			Proximate Cause of Death.
					Years	Months.	Days.	
1	H. C.....	F.....	56	October 5, 1882..	11	0	17	Latent Phthisis.
2	J. C.....	M	64	" 22, " ..	0	6	3	Diarrhœa.
3	C. W.....	M	44	" 23, " ..	7	8	1	Apoplexy.
4	C. H.....	M	42	November 5, " ..	0	7	1	General Paresis.
5	W. W.....	M	70	" 11, " ..	0	1	12	Senile Decay.
6	D. N.....	M	25	" 25, " ..	0	11	6	Latent Phthisis.
7	F. S. B....	M	33	" 26, " ..	0	1	27	Softening of Brain.
8	W B.....	M	22	December 1, " ..	3	9	23	Marasmus.
9	A. B.....	F.....	53	" 4, " ..	1	3	11	Concussion of Brain.
10	S. Q.....	M	46	" 21, " ..	0	1	26	Gangrene.
11	A. G.....	M	77	" 21, " ..	9	10	13	Senile Decay.
12	A. S.....	M	36	" 23, " ..	2	1	20	Diarrhœa.
13	A W.....	M	51	" 25, " ..	12	1	2	Paralysis.
14	R. J. P. M.	M	40	" 29, " ..	0	4	14	General Paresis.
15	A. R.....	F.....	28	January 26, 1883..	0	0	14	Exhaustion. Ac. Mania.
16	A. M.....	F.....	42	" 31, " ..	1	6	4	Latent Phthisis.
17	W. R.....	F.....	76	February 4, " ..	11	6	7	Senile Decay.
18	E. A.....	F.....	62	" 17, " ..	1	8	11	Epilepsy.
19	C. B.....	F.....	73	" 22, " ..	0	7	3	Senile Gangrene.
20	J. W.....	M	41	March 2, " ..	1	2	15	Pneumonia.
21	M. A. R...	F.....	70	" 3, " ..	4	5	19	Caries.
22	W. C.....	M	44	" 26, " ..	0	1	16	Epilepsy.
23	E. S.....	F.....	73	" 27, " ..	0	6	20	Senile Decay.
24	E. G.....	M	27	April 2, " ..	2	4	1	Phthisis.
25	A. S.	M	58	" 7, " ..	4	11	23	Senile Decay.
26	S. B.....	F.....	55	" 10, " ..	12	4	18	Epilepsy.
27	R. B.....	M	43	" 18, " ..	12	4	26	Lupus Exedens.
28	R. B.....	F.....	52	" 19, " ..	0	2	0	Diarrhœa.
29	J. S.....	M	43	May 10, " ..	5	11	28	Epilepsy.
30	D. N.....	M	75	" 16, " ..	2	2	28	Senile Decay.
31	A. W. B..	M .. .	41	" 19, " ..	1	3	22	Heart Clot.
32	S. J.....	M	78	" 26, " ..	0	1	13	Senile Decay.
33	M. Q	F.....	70	" 26, " ..	1	7	13	Apoplexy.
34	C. H.....	M	76	" 26, " ..	0	10	26	Serous Apoplexy.
35	J. T.....	F.....	56	June 2, " ..	0	0	15	Fracture of femur.
36	C. C.....	M	64	" 2, " ..	12	6	10	Senile Decay.
37	W. W. ...	M ...	84	" 4, " ..	3	6	29	Senile Decay.
38	C. McC....	F	35	" 8, " ..	5	3	28	Epilepsy.
39	E. F.....	F.....	66	" 29, " ..	0	7	27	Paralysis.
40	A. N.....	F.....	45	July 6, " ..	2	9	1	Heart Clot.
41	W. H. H..	M	53	" 10, " ..	7	8	6	Marasmus.
42	B. F.....	M	47	" 14, " ..	5	4	2	Paralysis.
43	M. M. C...	F.....	39	" 17, " ..	5	6	26	Phthisis.
44	S. H	M	40	" 19, " ..	0	5	17	Marasmus.
45	S. D.....	F.....	69	" 20, " ..	12	7	27	Heart Disease.
46	S. C.	F.....	71	" 27, " ..	12	8	4	Apoplexy.
47	H. J. L....	M. ...	26	August 1, " ..	2	0	11	Epilepsy.
48	P. McD....	M	53	" 6, " ..	8	5	25	Tumor of Brain.
49	P. R.....	M	43	" 11, " ..	11	0	9	Heart Disease.
50	T. M.....	M	31	" 28, " ..	5	9	8	Epilepsy.
51	H. H.....	M	79	" 30, " ..	1	5	13	Senile Decay.
52	E. S.	F.....	?	September 15, " ..	1	11	2	Heart Clot.
53	T. B.....	M	33	" 17, " ..	0	0	9	Paralysis.
54	S. H.....	F.....	55	" 27, " ..	11	10	14	Bronchitis.
55	I. E.....	M	70	" 29, " ..	0	3	0	Chr. Diarrhœa.

TABLE NO. 7.

Shewing Trades, Callings and Occupations of Patients admitted into the Asylum

Trades, Callings and Occupations.	During the Year.			During Former Years.			Total.
	Males.	Females	Total.	Males.	Females	Total.	
Agents	1		1	3		3	4
Book-keepers				2		2	2
Bakers				3		3	3
Bricklayers				2		2	2
Butchers				7		7	7
Blacksmiths				11		11	11
Brass-finishers	1		1	1		1	2
Brewers				2		2	2
Barbers				2		2	2
Broom-makers				2		2	2
Commercial travellers	1		1				1
Cabinet-makers				5		5	5
Confectioners				2		2	2
Coopers	1		1	8		8	9
Carpenters	2		2	31		31	33
Clerks	2		2	19		19	21
Clergymen				1		1	1
Coppersmiths				1		1	1
Dyers				1		1	1
Domestic servants, all kinds	1	9	10	3	145	148	158
Dressmakers		1	1		6	6	7
Druggists				1		1	1
Engineers				5		5	5
Farmers	31		31	391	9	400	431
Fishermen				2	1	3	3
Founders				1		1	1
Ferrymen				2		2	2
Furriers					1	1	1
Gardeners				8		8	8
Hucksters					1	1	1
Hatters				1		1	1
Hostlers				1		1	1
Housekeepers		51	51		625	625	676
Jewellers				3		3	3
Labourers	16		16	302		302	318
Laundresses					1	1	1
Ladies		3	3		5	5	8
Lawyers	1		1				1
Lumbermen				1		1	1
Milliners					11	11	11
Masons				7		7	7
Machinists	3		3	4		4	7
Matchmakers				1		1	1
Millers	1		1	7		7	8
Moulders				4		4	4
Merchants	1		1	21		21	22
Music-teachers				1	1	2	2
Nurses					1	1	1
Organ-builders				1		1	1
Plasterers				3		3	3
Pensioners				4		4	4
Photographers				4		4	4
Prostitutes					6	6	6
Painters				13		13	13
Printers	1		1	7		7	8
Peddlers				2	1	3	3
Physicians				5		5	5

TABLE NO. 7.—*Continued.*

Shewing Trades, Callings and Occupations of Patients admitted into the Asylum.

Trades, Callings and Occupations.	During the Year.			During Former Years.			Total.
	Males.	Females	Total.	Males.	Females	Total.	
Sailors				5		5	5
Students	2		2	11		11	13
Spinners					2	2	2
Sisters of Charity					1	1	1
Soda-water manufacturers				1		1	1
Stone-cutters				3		3	3
Shewmen				2		2	2
Saddlers				4		4	4
Shoemakers	2		2	16		16	18
Seamstresses					9	9	9
Slaters				1		1	1
Soldiers				1		1	1
Surveyors				1		1	1
Ship-builders				2		2	2
Teachers	1		1	13	10	23	24
Tinsmiths				4		4	4
Tavern-keepers				7	1	8	8
Tailors				19	3	22	22
Tanners	1		1	3		3	4
Toll-gate keepers		1	1	1		1	2
Watchmakers	2		2	4		4	6
Wood-workers				1		1	1
Weavers					2	2	2
Wheelwrights				1		1	1
Waggon-makers				4		4	4
Unknown or other employments	2	7	9	102	209	311	320
Total	73	72	145	1114	1051	2165	2310

TABLE NO. 8.

Shewing Causes of Insanity.

CAUSES OF INSANITY, In respect of the admissions for the year ending 30th September, 1883.	NUMBER OF INSTANCES IN WHICH EACH CAUSE WAS ASSIGNED.					
	As predisposing cause.			As exciting cause.		
MORAL.	Males.	Females.	Total.	Males.	Females.	Total.
Domestic troubles, including loss of relatives or friends				3	8	11
Religious excitement				5	5	10
Adverse circumstances, including business troubles				4	2	6
Love affairs, including seduction				1	1	2
Mental anxiety, "worry"				4	0	4
Fright and nervous shocks				2	1	3
PHYSICAL.						
Intemperance in drink	1		1	5	1	6
Intemperance, sexual					1	1
Venereal disease						
Self-abuse, sexual				8	1	9
Over-work				4	3	7
Sunstroke	1		1	4		4
Accident or injury				2	1	3
Pregnancy						
Puerperal					8	8
Lactation					1	1
Puberty and change of life		1	1		2	2
Uterine disorders					1	1
rain disease, with general paralysis						
Brain disease, with epilepsy				1	1	2
Other forms of brain disease					2	2
Other bodily diseases or disorders, including old age	1		1		3	3
Fevers	1		1		2	2
HEREDITARY.						
With other ascertained cause in combination		1	1			
With other combined cause not ascertained	12	14	26			
CONGENITAL.						
With other ascertained cause in combination						
With other combined cause not ascertained					1	1
Unknown	57	56	113	30	27	57
Total	73	72	145	73	72	145

TABLE No. 9.

Shewing the Probational Discharges and the result thereof.

Reg. No.	Sex.	Initials.	Date of Probational Discharge.	Term of Probation.	Result.
2142	M.....	J. J. S. ...	October 18, 1882.....	3 Months.....	Discharged.
1791	M.....	J. H. J....	" 19, "	1 "	"
2099	F.....	M. A. B...	November 1, "	1 "	"
1950	F.....	A. B.....	" 6, "	2 "	Died at home.
2155	M.....	J. W. S....	" 6, "	2 "	Discharged.
2150	M.....	J. W.....	" 7, "	1 "	"
2141	F.....	A. McG...	" 11, "	1 "	"
1687	F.....	E. W.....	" 13, "	3 "	Returned.
2126	M.....	H. McB...	" 14, "	3 "	Discharged.
2169	M.....	D. M.....	December 2, "	3 "	"
2113	F.....	M. E	" 5, "	3 "	Returned.
1516	F.....	E. B.....	" 7, "	3 "	Discharged.
2061	M.....	A. R. D. L.	" 14, "	3 "	"
2144	F.....	H. B.....	" 16, "	6 "	Returned.
2181	M.....	A. L.....	" 18, "	2 "	Discharged.
1876	M.....	J. O. D....	" 23, "	3 "	Returned.
1455	M.....	C. W. H...	" 27, "	3 "	"
2175	M.....	M. A. E...	" 29, "	2 "	Discharged.
2163	M.....	J. W.....	" 30, "	2 "	"
1895	F.....	D. F.....	January 5, 1883.....	6 "	"
2100	F.....	M. D.....	" 5, "	3 "	"
1881	F....	E. D.....	" 18, "	3 "	"
2178	M.....	M. McK...	" 19, "	3 "	"
2170	F.....	C. S.....	" 23, "	1 "	"
2191	F.....	J. D.....	" 26, "	3 "	Returned.
1660	M.....	R. B.....	" 30, "	3 "	Discharged.
2204	M.....	J. B.....	February 9, "	1 "	"
2218	M.....	S. H.	" 12, "	1 "	Returned.
2189	F.....	A. R.....	" 14, "	2 "	Discharged.
2199	F.....	M. S.....	" 19, "	2 "	Discharged.
2031	M.....	J. W.....	" 21, "	1 "	Died at home.
2197	M.....	L. S.....	March 6, "	3 "	Discharged.
2173	F.....	K. M.....	" 10, "	1 "	"
1844	M.....	T. J.....	" 15, "	6 "	"
2008	F.....	M. A. L..	" 20, "	2 "	Returned.
2149	M.....	F. B.....	" 20, "	4 "	Discharged.
2210	F.....	K. McC...	April 3, "	2 "	Returned.
2235	F.....	E. C.....	" 9, "	2 "	Discharged.
2185	M.....	P. T.	" 16, "	6 "	Still Out.
2233	F.....	S. E. P....	" 18, "	1 "	Discharged.
1940	M. ...	J. S.....	" 26, "	2 "	"
2161	F.....	C. McR...	May 1, "	3 "	Returned.
2216	F.....	M. M.....	" 2, "	3 "	"
1223	F.....	E. E.....	" 2, "	1 "	Discharged.
1596	F.....	M. A. C...	" 4. "	1 "	"
2188	F.....	J. C.....	" 7, "	6 "	Still Out.
2237	F.....	A. D.....	" 9, "	6 "	"
2229	M.....	J. S.....	" 9, "	4 "	Discharged.
1954	F.....	M. J. H...	" 10, "	1 "	"
2208	F.....	C. M.....	" 14, "	3 "	"
2218	M.....	S. H.	" 17, "	6 "	Returned.
2234	M.....	W. H.....	" 24, "	1 "	Discharged.
2158	M.....	J. D.....	" 29, "	3 "	Returned.
2220	M....	E. K ...	" 30, "	3 "	Discharged.
1903	F.....	M. A. N...	" 31, "	1 "	"
2264	M.....	B. McD...	June 8, "	2 "	Returned.
1486	M.....	L. E. T....	" 25, "	2 "	Discharged.
2230	F.....	E. T.....	" 30, "	2 "	"
2144	F.....	H. B.....	July 7, "	6 "	Still Out.
2080	M.....	G. C. S....	" 9, "	6 "	"
2183	F.....	M. G.....	" 19, "	2 "	Returned.
2278	M.....	P. R.....	" 24, "	2 "	Still Out.

TABLE No. 9.—*Continued.*

Shewing the Probational Discharges and the result thereof.

Reg. No.	Sex.	Initials.	Date of Probational Discharge.	Term of Probation.	Result.
2284	M.....	T. C.....	July 25, 1883.....	1 Month	Discharged.
1949	F.....	S. C.....	" 27, "	1 "	"
1597	F.....	M. McD...	August 1, "	2 "	Still Out.
2270	F.....	A. McD...	" 4, "	2 "	"
2286	F.....	E. A. C ...	" 6, "	3 "	"
2215	M.....	W. S	" 15, "	1 "	Discharged.
2282	M.....	W. H. K .	" 27, "	1 "	"
2091	F.....	J. G.....	September 6, "	1 "	Returned.
2252	M.....	T. S.	" 8, "	3 "	Still Out.
2180	M. ...	J. L.....	" 11, "	2 "	"
2248	F.....	E. B.....	" 14, "	3 "	"
2260	F.....	M. R.....	" 22, "	1 "	"

TABLE No. 10.

Showing the nature of employment and the number of day's work performed by Patients during the year.

NATURE OF EMPLOYMENT.	Average Number of Patients who worked.	Days Worked.		
		Male.	Female.	Total.
Carpenter's Shop	10	2495	....	2495
Tailor's Shop	5	1275	....	1275
Shoe Shop	2	485	....	485
Engineer's Shop	4	1182	....	1182
Blacksmith's Shop	....	....	....	....
Mason Work	5	1024	....	1024
Repairing Roads	...	....	....	....
Wood Yard and Coal Shed	5	1261	....	1261
Bakery	2	650	....	650
Laundry	14	1964	2490	4454
Dairy	3	424	346	770
Butcher's Shop and Slaughter House	4	1329	....	1329
Piggery	....	....	....	....
Painting	5	1184	....	1184
Farm	30	6043	....	6043
Garden	26	6119	....	6119
Grounds	....	....	....	....
Stable	2	576	....	576
Kitchen	26	2459	5704	8163
Dining Room	24	2670	6079	8749
Officers' Quarters	....	....	....	....
Sewing Rooms	55	....	11139	11139
Knitting	151	1663	31805	33468
Spinning		....	....	....
Mending	31	....	6303	6303
Halls	148	24065	22774	46839
Storeroom	1	103	...	103
General	73	13296	3451	16747
Cane Work	2	200	...	200
Total	628	70467	90091	160558

TABLE No. 11.

Number of Articles made and repaired in the Sewing Room during the year ending September 30th, 1883.

ARTICLES.	Made.	Repaired.	ARTICLES.	Made.	Repaired.
Dresses	1060	1	Canvas Suits	18	34
Dresses, Uniform	41	3	Hats, straw	....	3
Dresses, Canvas	18	....	Socks (pairs)	....	2302
Skirts	125	....	Mattrasses	149	....
Chemises	213	....	Palliasses	....	1
Chemises, Flannel	190	....	Pillows, hair	68	4
Drawers	57	....	Pilllows, feather	4	....
Drawers, Flannel	196	152	Sheets	93	163
Aprons	1154	....	Pillowslips	590	28
Night Dresses	63	....	Bolsterslips	6	....
Caps, Women's	135	....	Blankets	....	188
Caps, Men's	26	....	Quilts	....	48
Collars	177	....	Quilts, Canvas	1	6
Cuffs (pairs)	5	....	Ticks, Bed	375	195
Waists	56	...	Ticks, Canvas	14	5
Sun Bonnets	6	....	Ticks, Pillow	48	....
Jackets	2	....	Towels	241	5
Cloth Slippers (pairs)	33	....	Bureau Covers	48	...
Neckties	173	....	Blinds and Curtains	116	....
Shirts	872	220	Mangle Cloth	1	1
Shirts, Flannel	86	87	Oil Cloth Cover	1	....
Guernseys	....	6	Bagatelle Table Cover	1	...
Pants	599	280	Crumb Cloths	2	....
Pants, Uniform	55	22	Pudding Cloths	106	....
Coats	446	117	Tea Strainers	4	....
Coats, Uniform	55	12	Table Cloths	13	....
Vests	225	43	Table Napkins	36	....
Vests, Uniform	2	....	Carpets	5	....
Overalls	52	2	Carpenters baskets lined	6	...
Blouses	66	45			
Blouses, Pants	58	34	Total	8192	4007

TABLE No. 12.

Number of Articles made and repaired in the Wards during the year ending September 30th, 1883.

——	Made.	Repaired.	——	Made.	Repaired.
Dresses	305	3155	Pillow Ticks	5	48
" Uniform	35	24	Pillow Slips	401	962
" Canvas	0	582	Bolster Slips	6	6
Skirts	284	1742	Sheets	866	1647
Chemises	928	2319	Towels	1002	0
" Flannel	52	362	Stockings (pairs)	0	4538
Drawers	243	1872	Socks (pairs) (marked)	93	1116
Nightdressess	280	1448	Palliasses	0	33
Aprons	516	1774	Mattrasses (teasell)	140	0
Waistcoats	4	0	Pillows (re-made)	190	4
Jackets	2	0	Quilts, hemmed	361	878
Hats (trimmed)	138	24	" Canvas	0	99
Neckties	262	0	Blankets, (Overcast)	250	1122
Collars	12	0	Brogan's (pairs)	53	
Braces (pairs)	14	0	Boot Laces "	35	
Shirts	1	1159	Slippers "	58	
" Flannels	0	260	Brogan's and Boots, soled		147
Caps, Men's	0	34	" " heeled		154
Pants	0	413	" and Shoes, also Slippers		517
Coats	0	128	and Moccasins		
	0	186	Chairs re-seated with cane	58	
Mats	193	0	Chairs re-seated with reed	77	
Bales, for nine pins	15	0	Total	6899	31,279
Ticks	0	5033			
" Canvas	0	99			

TABLE No. 13.

Number of Articles passing through the Laundry during the year ending September 30th, 1883.

	No.		No.
Dresses	12,243	Pants	1,731
" Canvas	1,630	Coats	1,170
Night-dresses	6,945	Vests	808
Aprons	27,840	Blouses	293
Pinafores	1,464	Overalls	144
Skirts	5,797	Canvas Suits	200
Drawers	14,428	Blankets	43,448
Chemises	31,490	Sheets	84,860
" Flannel	1,216	Quilts	17,422
Waists	2,329	" Canvas	172
Caps	1,581	Pillow Slips	59,059
Jackets	4	Bolster Slips	149
Shawls and Cloaks	146	Bed Ticks	19,213
Handkerchiefs	9,960	Towels	43,420
Collars	8,582	Bureau Covers	637
Bibs	805	Tablecloths	952
Neckties and scarfs	1,516	Table Napkins	3,822
Cuffs (pairs)	1,978	Crumb Cloths	12
Stockings "	20,509	Curtains and Blinds	398
Socks "	16,756	Carpets	2
Shirts	22,363	Pudding Cloths	3,101
" Flannel	4,820	Total	478,663
Guernseys	2,308		

Amount of Knitting done during the year ending September 30th, 1883.

Stockings	1,397	Pairs.
" Re-footed	532	"
Socks	1,769	"
" Re-footed	495	"
Mitts	4	"
Total	4,197	Pairs.

TABLE No. 14.

PERIOD.	Duration of Insanity Prior to Admission.	Length of residence of those remaining in Asylum on 30th September.	Periods of treatment of those who were discharged cured during the year.	Periods of treatment of those who were discharged improved during the year.	Periods of treatment of those who were discharged unimproved during the year.
Under 1 month	39	5	..	1	..
From 1 to 2 months	17	11	1	..	1
" 2 " 3 "	10	13	3	..	1
" 3 " 4 "	8	10	5	..	2
" 4 " 5 "	9	12	5	1	2
" 5 " 6 "	4	10	6	1	1
" 6 " 7 "	4	6	4	1	1
" 7 " 8 "	1	7	5	3	1
" 8 " 9 "	1	4	..	..	..
" 9 " 10 "	2	9	..	1	..
" 10 " 11 "	1	14	1	..	..
" 11 " 12 "	1	6	2	1	..
" 12 " 18 "	6	39	7	..	1
" 18 months to 2 years	1	33	1	3	..
" 2 " 3 years	8	72	3	3	..
" 3 " 4 "	7	64	..	2	..
" 4 " 5 "	5	53	1	1	..
" 5 " 6 "	3	55	..	..	1
" 6 " 7 "	..	37	..	..	..
" 7 " 8 "	1	32	..	..	..
" 8 " 9 "	1	43	..	..	..
" 9 " 10 "	1	39	..	..	..
" 10 " 15 "	5	117	..	1	..
" 15 " 20 "	1	39	..	..	..
20 years and upwards	3	165	..	..	..
Unknown	6	..	..	..	..
Totals	145	895	44	19	11

TABLE No. 15.

Restraint employed in Asylum for the Insane, London, for official year ending September 30th, 1883.

——	Males.	Females.	Total.
Number of Patients restrained	1	20	21
Number of times restraint and seclusion were employed	1	76	77
Total hours in seclusion	..	26¾	26¾
" " restraint bed	..	12½	12½
" " restraint chair	..	117	117
" " muffs	..	20¾	20¾
" " wristlets	20	....	20
Total number of hours patients were in restraint and seclusion during the year	20	279¼	299¼

ASYLUM FOR THE INSANE, KINGSTON.

Kingston, 1st October, 1883.

To the Inspector of Prisons and Public Charities, Ontario.

Sir,—In accordance with requirement I have the honour to submit the Twenty-eighth Annual Report of this Asylum, for the year ending the 30th September, 1883—the sixth since it became exclusively a Provincial institution.

There were in residence on the Ist October, 1882, 223 males, 214 females; total, 437. Admitted during the year, 54 males, 40 females; total, 94. Total number under treatment, 277 males, 254 females; total, 531. Discharged during the year, 22 males, 23 females; total, 45. Died, 25 males, 12 females; total, 37. Total decrease, 47 males, 35 females; total, 82.

Remaining in Asylum 30th September, 1883, 230 males, 219 females; total, 449.

Collective days stay of all patients in residence during the year: males, 82,375, females, 79,163; total, 161,538.

Average daily population, 225.68 males, 215.88 females; total, 442.56. Average weekly cost per capita, $2.43.

Admissions, Discharges, Deaths, etc..

Of those admitted during the year, 81 were admitted for the first time, 11 for the second time, one for the fourth time, and one for the fifth time. Two persons were admitted twice within the year, consequently there were but 92 individuals admitted during the year.

Year by year the number of incurable cases in residence has increased, and at the close of the record stands as follows: incurable, 427; doubtful, 14; hopeful, eight.

Of the actual admissions of the year, 15 were discharged and 12 died.

Of those remaining, 48 are incurable and 11 doubtful—leaving eight who may possibly recover.

These facts simply prove that a large proportion of the patients sent to us were retained at home until they became incurable, and that they were sent to the Asylum, not for treatment but to be housed, fed and cared for for the rest of their days.

If this influx of chronic cases continues from year to year (and there is every reason to believe that it will), the increased accommodation now being provided for this district will soon be insufficient.

The discharges of the year (45) were equal to nearly 48 per cent. of the year's admissions, and 8.4 per cent. of the total number under treatment.

The majority of those discharged improved were taken home on probation, and the trial proving satisfactory they were unconditionally discharged at the expiration of the probational term. Of the four discharged unimproved, three were taken home by friends with my approval, owing to physical infirmity, and one was written off to give effect to the discharge warrant. She was at once readmitted, as she was unfit to be at large.

The death rate was higher this year than last. Phthisis and General Paresis were the largest death factors, and were the cause of death in fourteen cases. All of the deaths were from natural causes, and it is with a feeling of thankfulness that we are able to report another year's immunity from these sad casualties which have to be recorded in the history of every large asylum, viz., deaths from suicide or injury.

There were no transfers and no successful elopements during the year.

Improvements.

The most important improvements of the year were as follows:—

The work on the cottage for chronic patients, commenced last year, has been pushed forward, and the building should soon be completed.

This addition, which we hope to occupy about December, will furnish accommodation for 60 or 70 patients, and as the occupants will have entire freedom of the grounds dur-

ing suitable weather, we anticipate that it will prove a very pleasant feature of the Asylum.

After many tedious and vexatious delays, the gas works, including house fixtures, have been completed and taken over from the contractors. The works were put in practical operation during the last week of the year, and henceforth the Asylum will be lighted by gas. The system adopted is that known as the "Lowe" process. The gas is generated from petroleum with the aid of hard coal and superheated steam.

The gas is of good quality, does not liquefy, and is far superior, both as regards brilliancy and safety to the old coal oil lamps.

At the end of last year two new steam boilers were in course of location in the boiler house. They were in constant use during the year, and were of decided benefit during the last unusually severe winter.

A new hot-water boiler was supplied recently by the Public Works Department to supply the place of the old one, which was not equal to the requirements.

Three new tubular boilers of an improved pattern are now being made, under contract, to replace the two old worn out. These additional boilers were required to complete our steam-heating system and to supply steam for heating the new cottage.

The skylights to improve the ventilation and lighting of wards Nos. seven and eight were completed this year. Owing, however, to the unsatisfactory way in which the contract work was done, considerable difficulty was experienced in making them water-tight. They were thoroughly overhauled, and are now in a pretty satisfactory condition.

The old ventilating boxes which have so long been an obstruction on the upper wards were removed, and, under the direction of the superintendent of works, an improved system of ventilating carried into effect. When the corridor walls are plastered and painted, these wards will be as bright and cheerful as any in the building.

A new and improved verandah for the old cottage is in course of construction. This verandah was rendered necessary by the dangerous condition, from decay, of the old one.

A quantity of furniture, consisting of bedsteads, palliasses, mattresses, chairs, settees, etc., was ordered for the different wards, but has not been delivered yet.

Besides the ordinary improvements to the farm and grounds, 6,430 lineal feet of drains and over 500 feet of fence were made during the year.

To insure more efficient service on the part of the night attendants, an "American Watchman's Time Detector" was placed in the central office with communicating stations throughout the building. This instrument, worked by electricity, records very accurately the rounds of the night-watchers, and not only satisfies *us* that they are on the alert, but also protects *them* against the imputation of sleeping while on duty.

Requirements.

The chief requirement of the coming year will be furniture and furnishings for the new cottage.

As this building will be ready for occupancy in a short time, the furniture should be ordered at once as otherwise the opening will be delayed.

To render our heating arrangements more secure and effective, the old and worn-out steam coils in the vaults should be removed and replaced by new and better arranged ones.

The old coils are so rusted and worn that they will scarcely bear sufficient pressure to keep up the circulation necessary to generate heat.

A cylindrical washing machine is still a requirement in our laundry.

A good steam mangle and improved sad iron heaters are also much needed.

The corridors of wards Nos. seven and eight have never been finished; now, however, that they are properly lighted and ventilated, the walls should be plastered and painted. This would necessitate but a trifling expenditure, and would materially add to the brightness and appearance of the wards.

Two new steam kettles and a set of steam roasters are required for the general kitchen.

In order to afford healthful exercise and amusement to the patients, particularly during the winter season, a gymnasium should be provided where a considerable number

of patients could resort, without much supervision, for recreation. We have no room at present which we could use for such a purpose but an excellent site for a suitable building exists in the airing court for males. The east, north, and part of the south wall would, with very little additions answer admirably for three sides of the structure and only one wall and the roof would be required to complete the enclosure. Such a room would, I am satisfied, answer an admirable purpose.

Work.

As shewn by supplementary table No. 2, our patients have performed a considerable amount of work of various kinds during the year.

No less than 57,244 days' work was recorded, performed by 223 patients, an increase 1,140 days over last year.

The return from the farm and garden shews that the out door work was not expended in vain, as the value of the produce amounts to $6,664,17.

We are at a loss for occupation for our patients during the long and severe winter, and if some in-door occupation, which would give employment to a considerable number of men, could be introduced it would be a great boon. Walking up and down the ward is a wearisome way of spending the time. When possible, we have a gang breaking stones, but only a limited number can be thus employed as a large, comfortably heated room is a necessity and this always cannot be commanded.

Amusements and Religious Services.

The entertainments were similar to those of preceding years.

Though the commendable liberality of the different city choirs and musical and dramatic organizations excellent entertainments were enjoyed weekly during last winter. The Asylum Dramatic Club opened the season with a mirth-provoking dramatic performance and periodically during the winter appeared on the boards of our little theatre with something highly entertaining. Their success will I hope act as a stimulant to renewed efforts during the coming season. To our city friends and the members of the staff referred to we extend our thanks and regret that our appreciation cannot take a more tangible form.

To newspaper editors and proprietors who have donated their publications to us we are greatly indebted. Few persons welcome the advent of the daily and weekly prints more heartily than the inmates of an Asylum, who are cut off from free intercourse with the outside world. It is much to be regretted that our institution appears n the free list of but few of the newspapers published in this district. Not a single dailyocomes to us gratuitously though there are several published in this end of the Province.

Could the publishers but see the eagerness with which papers *from home* are read, I am sure a copy of every issue would be dedicated to this most deserving charity. We would gladly subscribe for every publication in this vicinity did the means at our disposal admit of it.

We have received a liberal share of exchanges from the editors of the *British Whig* and *Daily News* for which we offer our grateful acknowledgements.

We are indebted to the Rev. W. H. Withrow of Toronto for a donation last Christmas of a large number of magazines, papers, etc.

It is again my pleasant duty to thank the clergymen of the different city churches for their assistance, freely rendered, during the past year. With very few exceptions there was service every Sunday morning throughout the year.

The Roman Catholic clergy continue to visit us and administer spiritual comfort to such members of their persuasion as require it.

Impure Water.

For many years past occasioned cases of fever have occurred in the wards, but as the ventilation and drainage were good and the water was supposed to be pure these isolated

cases were ascribed to no special cause. The occurrence however, early this spring of an outbreak of typhoid fever, resulting in the death of one of our most highly esteemed female attendants, together with the development of a persistent form of diarrhœa which prostrated many of our patients (as many as forty were ill at one time) convinced us that there was a specific cause for the trouble, and it became our duty to discover it if possible. After examining thoroughly the ventilation, heating, drainage, food supply, etc., etc., without finding anything satisfactory to account for the sickness, our attention was directed to the water used for domestic and other purposes. A careful examination of the water, which we had hitherto considered quite pure, as it was pumped from the lake above any source of contamination from sewage, led us to believe that it contained impurities. To satisfy ourselves of the nature and extent of the impurities several samples of the water were sent to competent analysts for examinatian. The analysis proved the water to be polluted with decomposable vegetable matter and the analysts unqualifiedly condemned it as dangerous and unfit for domestic use in its then existing condition.

The impurity of the water having been demonstrated our next duty was to asscertain the source of the contamination with a view to remedy the defects.

We were soon convinced that there were two sources of pollution, first, Little Cataraqui Creek, and second, the Bay of Quinte. Little Cataraqui Creek runs for several miles through a dense bog and empties into Little Cataraqui Bay a short distance above the Asylum farm. The water from this creek is carried by the current around a point on the farm and directly over the terminal end of our water pipe. So thick are the weeds etc., in this stream that a boat cannot be propelled up it.

The water of the Bay of Quinte is rendered impure by the number and extent of the marshes on its shores and the number of marshy streams which act as feeders to it. The water from this bay flows directly past the Asylum.

Two means of improving the water supply were suggested. 1st, extending the supply pipe out into the lake, and 2nd, the introduction of a filtering apparatus.

The first I do not consider practicable as the pipe would have to be carried out a great distance to insure pure water, and if extended it would be liable at any time to be disturbed by the anchors of vessels.

Having demonstrated by experiments that the impurities, which are not in solution but merely held in suspension, could be removed by filtration I have no hesitation in recommending the introduction of a suitable filtering apparatus, so located that all of the water pumped into the tanks for distribution would have to pass through it.

My recommendation is in your hands, and I hope prompt action will be taken to give us an abundant supply of pure wholesome water.

Burning of Lodge.

Amongst the occurrences of the year I have to record the burning of the Hatwood Lodge. This lodge was occupied by a night attendant who was dismissed for neglect of duty.

The house was a small rough-cast one and as it was insured the loss was not great. We have reason to believe that the fire was the work of an incendiary.

Officers and Employés.

But few changes have occurred on the staff of officers and employés during the year. Only two employés were discharged for dereliction of duty. Those now in the service are efficient and reliable and heartily co-operate with me in forwarding the interests of the asylum.

At the proper time I will present a claim in behalf of some of the employés for increased assistance and increased remuneration.

During the year just closed the medical officers put forth their best endeavours to treat successfully those unfortunates entrusted to their care, and the result shews a fair measure of success. Their duties however are so numerous and onerous, and their time is so fully occupied with clerical and supervisory work that they cannot devote the

time desirable to strictly professional work. When the new cottage is opened our population will be increased to over 500, then another physician will be required on the medical staff, for composed as it is, of but two persons, the Medical Superintendent and the Assistant Medical Superintendent (without even the assistance of a clerk, dispenser or student) it will not be able to perform the work which will develope upon it in a satisfactory manner.

I have the honour to be,

Sir,

Your obedient servant,

W. G. METCALF,

Medical Supt.

ANNUAL STATISTICAL REPORT

Of the operations of the Asylum for Insane, Kingston, for the year ending 30th September, 1883.

TABLE NO. 1.

Showing movemennts of Patients in the Asylum for the official year ending 30th September, 1883.

	Male.	Female.	Total.	Male.	Female.	Total.
Remaining, October 1st, 1882				223	214	437
Admitted during year :—						
By Lieutenant-Governor's Warrant	37	30	67			
" Medical Certificate	17	10	27			
				54	40	94
Total number under treatment during year				277	254	531
Discharges during year :—						
As recovered	13	12	25			
" improved	7	9	16			
" unimproved	2	2	4			
Total number of discharges during year	22	23	45			
Died	25	12	37			
Eloped						
Transferred						
				47	35	82
Remaining in Asylum, 30th September, 1883				230	219	449
Total number admitted since opening of Asylum				888	651	1539
" discharged	326	222	548			
" died	249	169	418			
" eloped	11		11			
" transferred	72	41	113			
				658	432	1090
" remaining, 30th September, 1883				230	219	449

TABLE NO. 2.

Showing the maximum and minimum number of patients resident in the Asylum the total number of days' stay of Patients, and the daily average number of Patients in the Asylum, from the 1st October, 1882, to 30th September, 1883.

	Male.	Female.	Total.
Maximum number of patients in residence (on the 25th of August, 1883)..	229	221	450
Minimum " " " (on the 27th of October, 1882)..	220	212	432
Collective days' stay of all patients in residence during year	82375	79163	161538
Daily average population	225.68	216.88	442.56

	Admissions of Year.			Total Admissions since Opening.		
	Male.	Female.	Total.	Male.	Female.	Total.
SOCIAL STATE.						
Married						
Widowed	33	14	47	346	347	693
Single	21	26	47	542	304	846
Not reported						
Total	54	40	94	888	651	1539
RELIGION.						
Presbyterians	13	9	22	136	100	236
Episcopalians	13	7	20	224	131	355
Methodists	11	4	15	133	110	243
Baptists				16	15	31
Congregationalists						
Roman Catholics	15	20	35	280	233	513
Mennonites						
Quakers						
Infidels						
Other denominations	2		2	95	57	152
Not reported				4	5	9
Total	54	40	94	888	651	1539
NATIONALITIES.						
English	5	1	6	78	40	118
Irish	10	6	16	201	163	364
Scotch	2		2	46	42	88
Canadian	32	30	62	456	335	791
United States				12	6	18
Other countries	2	1	3	38	10	48
Unknown	3	2	5	57	55	112
Total	54	40	94	888	651	1539

TABLE NO. 3.

Showing the Counties from which Patients have been admitted up to 30th September, 1883.

COUNTIES.	Admitted during Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Algoma District				1	1	2
Brant				6	7	13
Bruce				3	4	7
Carleton	9	9	18	77	73	150
Dufferin						
Elgin				2	4	6
Essex				2	2	4
Frontenac	11	11	22	122	105	227
Grey				6	9	15
Haldimand				6	6	12
Halton				1		1
Hastings	1	2	3	37	27	64
Huron				6	5	11
Kent				2		2
Lambton				12	2	14
Lanark	6	4	10	55	51	109
Leeds and Grenville	8	2	10	59	44	103
Lennox and Addington	3	5	8	41	35	76
Lincoln				9	4	13
Middlesex				6	3	9
Muskoka District						
Norfolk				6	5	11
Northumberland and Durham				11	26	37
Ontario				14	17	31
Oxford				14	3	17
Peel				4	1	5
Perth				9	8	17
Peterborough				6	5	11
Prescott and Russell	3		3	18	13	31
Prince Edward				12	17	29
Renfrew	3	1	4	27	14	41
Simcoe				10	10	20
Stormont, Dundas and Glengarry	6	6	12	62	44	106
Victoria				3	11	14
Waterloo				10	4	14
Welland				6	4	10
Wellington				4	4	8
Wentworth				12	11	23
York				27	39	69
Not classed	4		4	180	33	213
Total admissions	54	40	94	888	651	1539

TABLE NO. 4.

Showing the Counties from which warranted cases have been admitted up to September, 1883.

COUNTIES.	Admitted during Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Algoma District				1	1	2
Brant				6	7	13
Bruce				3	4	7
Carleton	7	8	15	74	97	141
Dufferin						
Elgin				2	4	9
Essex				2	2	4
Frontenac	4	4	8	92	74	166
Grey				9	9	16
Haldimand				6	6	12
Halton				1		1
Hastings	1	1	2	36	23	59
Huron				6	5	11
Kent				2		2
Lambton				12	2	14
Lanark	6	4	10	52	49	101
Leeds and Grenville	4	2	6	46	34	80
Lennox and Addington	2	5	7	31	27	58
Lincoln				9	4	13
Middlesex				6	3	9
Muskoka District						
Norfolk				5	5	11
Northumberland and Durham				10	14	34
Ontario				14	17	31
Oxford				14	3	17
Peel				4	1	5
Perth				9	8	17
Peterborough				6	5	11
Prescott and Russell	2		2	17	12	29
Prince Edward				12	10	22
Renfrew	2	1	3	26	14	40
Simcoe				9	10	19
Stormont, Dundas and Glengarry	5	5	10	59	37	98
Victoria				3	11	14
Waterloo				10	4	14
Welland				6	4	10
Wellington				4	4	8
Wentworth				12	11	23
York				27	38	65
Not classed	4		4	11	2	13
Total admissions	37	30	67	652	543	1195

TABLE No. 5.

Shewing the length of Residence in the Ayslum of those discharged during the year.

No.	Initials.	Sex.	When Admitted.	When Discharged.	Remarks.
1	M. S.	F.	September 20, 1881.	October 5, 1882	Recovered.
2	G. O.	M.	May 14, 1879	" 5, "	Recovered.
3	W. Mc. L.	M.	June 8, 1882	" 6, "	Recovered.
4	A. W. D.	M.	November 30, 1881	" 10, "	Improved.
5	W. Y.	M.	March 13, 1882	" 21, "	Improved.
6	H. E. S.	F.	July 26, 1882	" 26, "	Recovered.
7	R. S.	M.	June 23, 1882	" 27, "	Recovered.
8	S. N.	F.	July 29, 1882	November 10, "	Improved.
9	M. P.	F.	December 19, 1877	" 13, "	Recovered.
10	A. W.	F.	October 19, 1880	" 18, "	Improved.
11	M. J. J.	F.	November 3, 1879	" 18, "	Improved.
12	M. J. S.	F.	February 7, 1882	" 18, "	Recovered.
13	W. M.	M.	July 18, 1882	" 21, "	Recovered.
14	P. D.	F.	June 23, 6882	" 25, "	Recovered.
15	N. McC.	F.	August 10, 1882	" 30, "	Improved.
16	E. C.	F.	April 21, 1882.	December 8, "	Recovered.
17	J. R.	M.	May 26, 1882	" 8, "	Recovered.
18	L. H.	M.	August 17, 1882	" 20, "	Improved.
19	R. J. G.	M.	February 21, 1832	" 28, "	Improved.
20	J. G. G.	M.	February 2, 1881	January 3, 1883	Improved.
21	M. A. M.	F.	April 5, 1882.	" 3, "	Recovered.
22	J. S. S.	M.	December 30, 1882	" 3, "	Unimproved.
23	A. L.	M.	December 22, 1881	February 19, "	Recovered.
24	R. S.	M.	April 20, 1882	" 27, "	Recovered.
25	H. McL.	F.	February 2, 1883.	March 9, "	Recovered.
26	J. McD.	M.	October 3, 1882	" 16, "	Recovered.
27	W. F.	M.	August 7, 1880	" 21, "	Improved.
28	E. F.	F.	October 21, 1873.	April 6, "	Improved.
29	E. C.	F.	December 28, 1882.	" 9, "	Recovered.
30	G. H. H.	M.	October 3, 1882	" 10, "	Recovered.
31	M. V.	F.	March 16, 1878	" 16, "	Improved.
32	J. C.	F.	December 18, 1882	" 17, "	Improved.
33	M. B.	F.	December 27, 1882	May 8, "	Recovered.
34	E. B.	M.	November 1, 1881	" 9, "	Unimproved.
35	E. M. W	F.	November 7, 1877	" 23, "	Unimproved.
36	S. D.	F.	May 13, 1883	" 30, "	Improved.
37	M A. W.	F.	January 31, 1883	June 20, "	Unimproved.
38	T. Q.	M.	May 5, 1883	" 23, "	Recovered.
39	J. McP.	F.	March 30, 1881	July 9, "	Improved.
40	D. R.	M.	July 23, 1878	" 28, "	Improved.
41	A. A.	F.	May 9, 1883	August 31, "	Recovered.
42	J. O. D.	M.	June 20, 1883	September 14, "	Recovered.
43	H. W.	M.	February 23, 1883.	" 14, "	Recovered.
44	E. A.	M.	December 30, 1882	" 22, "	Recovered.
45	M. J. K.	F.	February 23, 1883.	" 24, "	Recovered.

TABLE No. 6.

Shewing age, length of residence, and proximate cause of death of those who died during the year ending 30th September, 1883.

No.	Initials.	Sex.	Age.	Date of Death.	Residence in Asylum.			Proximate cause of Death.
					Years.	Months.	Days.	
1	D. S.....	M.....	30	October 23, 1882..	5	10	9	Phthisis.
2	J. Mc.....	F.	.....	November 4, " ..	1	.....	3	General Debility.
3	R. C. H...	M.	45	" 13, " ..	.....	.....	7	General Paresis.
4	E. H.....	F.	35	December 9, " ..	1	6	10	Epilepsy.
5	M. C.....	F. ...	38	" 13, " ..	.....	.....	29	Exhaustion of Mania
6	D. M.....	M.....	76	" 15, " ..	.....	.....	14	Senile Decay.
7	W. R.....	M.....	56	January 2, " ..	24	9	3	Apoplexy.
8	J. S.....	M.....	.....	" 13, " ..	4	1	14	General Paresis.
9	S. B.....	M.....	66	" 29, " ..	5	7	23	Diarrhœa.
10	A. C.....	M.	44	Feburary 2, " ..	2	11	1	General Paresis.
11	F. C. W...	M.	21	" 15, " ..	.....	7	7	Phthisis.
12	F. B. W...	M.	59	" 24, " ..	.....	1	20	Exhaustion of Mania
13	W. McD...	M.....	40	March 8, " ..	4	6	19	Epilepsy.
14	S. D......	F.....	71	" 13, " ..	25	10	6	Senile Decay.
15	D. C.....	F.....	91	" 18, " ..	9	.....	2	Senile Decay.
16	T. B.....	M.....	40	April 3, " ..	.....	3	.....	General Paresis.
17	A. McC. N.	M.....	.....	" 6, " ..	.....	.....	4	Exhaustion of Mania
18	L. S.	M.	26	" 12, " ..	1	6	18	Ascites.
19	E. R.....	F.....	54	" 19, " ..	5	4	8	Ascites.
20	J. H.....	M.....	....	" 20, " ..	15	10	5	Senile Decay.
21	S. M.....	M.....	35	" 21, " ..	1	5	20	Phthisis.
22	J. P.....	M.....	57	" 22, " ..	1	4	.....	General Paresis.
23	D. P.....	M.....	39	" 24, " ..	13	9	9	Dysentery.
24	D. H.....	F.....	52	" 28, " ..	1	5	14	Phthisis.
25	J. H.....	F.....	25	" 29, " ..	.....	3	27	Pneumonia.
26	M. O.....	M.....	25	May 4, " ..	1	6	15	Senile Decay.
27	E. R	F.....	72	" 20, " ..	4	1	12	General Paresis.
28	R. M. E...	M.	53	" 22, " ..	.....	6	25	Phthisis.
29	P. McC. L.	M.	24	June 1, " ..	.....	3	9	Exhaustion.
30	J. H.....	M.....	72	" 2, " ..	.....	.....	7	Paralysis.
31	J. McK....	M.....	65	" 5, " ..	5	4	28	Paralysis.
32	M. K.....	F.....	31	" 8, " ..	5	8	11	Phthisis.
33	A. S.....	F.....	65	" 15, " ..	9	8	29	Senile Decay.
34	G. T.....	M.	41	" 29, " ..	3	8	22	Chorea.
35	C. McL....	F.....	47	July 3, " ..	.....	3	10	Septicœmia.
36	P. J.....	M.	62	August 2, " ..	.....	2	2	Diarrhœa.
37	W. J.....	M.	28	" 25, " ..	3	7	26	Phthisis.

TABLE No. 7.

Showing Trades, Callings and Occupations of Patients admitted into the Asylum.

TRADES, CALLINGS, AND OCCUPATIONS.	During the Year.			During Former Years.			Total.
	Males.	Females	Total.	Males.	Females	Total.	
Agents				1		1	1
Bakers				1		1	1
Bricklayers				6		6	6
Butchers				1		1	1
Blacksmiths	1		1	18		18	19
Barbers				2		2	2
Barristers				3		3	3
Coopers				3		3	3
Carpenters	5		5	40		40	45
Clerks				18		18	18
Clergymen				3		3	3
Carriage-makers				3		3	3
Cooks				1	2	3	3
Carders				3		3	3
Captains of Steamboats				3		3	3
Custom-house Officers	2		2				2
Carters	1		1				1
Domestic Servants, all kinds		17	17	14	180	194	211
Dressmakers		2	2		13	13	15
Detectives				1		1	1
Druggists	1		1				1
Engineers				3		3	3
Farmers	17		17	205		205	222
Fishermen	1		1				1
Grocers	1		1				1
Harness-makers				6		6	6
Housekeepers		1	1		12	12	13
Inn-keepers				1		1	1
Jewellers				2		2	2
Labourers	13		13	242		242	255
Lumbermen				1		1	1
Masons				1		1	1
Machinists				7		7	7
Millers				3		3	3
Moulders	1		1				1
Merchants	3		3	11		11	14
Music-teachers	1		1				1
No occupation	4	3	7				7
Not stated	2	3	5	119	168	287	292
Other occupations		1	1	5	23	28	29

TABLE No. 7.—*Continued.*

Showing Trades, Callings and Occupations of Patients admitted into the Asylum.

TRADES, CALLINGS, AND OCCUPATIONS.	During the Year.			During Former Years.			Total.
	Males.	Females	Total.	Males.	Females	Total.	
Prostitutes					1	1	1
Painters				11		11	11
Printers				1		1	1
Physicians				4		4	4
Pumpmakers				2		2	2
Sailors				11		11	11
Students				3		3	3
Shoemakers				38		38	38
Seamstresses					41	41	41
Station-masters				2		2	2
Soldiers				10		10	10
Teachers	1	1	2	10	11	21	23
Tinsmiths				2		2	2
Tailors				11		11	11
Tanners				2		2	2
Wives		12	12		160	160	172
Total	54	40	94	834	611	1445	1539

TABLE NO. 8.

Showing Causes of Insanity.

CAUSES OF INSANITY. In respect of the admissions for the year ending 30th Sept., 1883.	Number of Instances in which each Cause was Assigned.					
	As Predisposing Cause.			As Exciting Cause.		
	M.	F.	Total.	M.	F.	Total.
Moral.						
Domestic troubles, including loss of relatives or friends				4	2	6
Religious excitement					1	1
Adverse circumstances, including business troubles				5		5
Love affairs, including seduction				1	4	5
Mental anxiety, "worry"				1		1
Fright and nervous shocks						
Physical.						
Intemperance in drink						
Intemperance, sexual						
Venereal disease						
Self-abuse, sexual				1		1
Over-work				1		1
Sunstroke				3	1	4
Accident or injury				3	0	3
Pregnancy						
Puerperal					2	2
Lactation						
Puberty and change of life					1	1
Uterine disorders					1	1
Brain disease, with general paralysis						
Brain disease, with epilepsy				4	5	9
Other forms of brain disease						
Other bodily diseases or disorders, including old age						
Fevers				1		1
Hereditary.						
With other ascertained cause in combination	18	11	29			
With other combined cause not ascertained						
Congenital.						
With other ascertained cause in combination	1	1	2			
With other combined cause not ascertained						
Unknown	35	28	63	30	23	53
Total	54	40	94	54	40	94

TABLE NO. 9.

Showing the Probational Discharges and the result thereof.

Reg. No.	Sex.	Initials.	Date of Probational Discharge.	Term of Probation.	Result.
1369	M...	E. B.....	1st November, 1882....	3 months	Discharged.
1407	M...	R. L.....	17th " "	3 "	"
1385	M...	J. P.....	7th February, 1883....	6 "	Returned.
1450	M...	R. M. E...	9th March, "	6 "	"
1364	M...	M. O.....	10th " "	3 "	Died at home.
1125	F....	M. V.....	13th " "	1 month	Discharged.
1331	M...	J. D.....	13th " "	1 "	Returned.
1076	F....	J. W.....	20th " "	3 months	"
1319	F....	I. McP....	27th " "	3 "	Discharged.
1239	M...	S. S.....	2nd April, "	3 "	Returned.
1481	M...	E. F. T....	26th May "	6 "	"
1500	M...	H. S.	2nd June "	6 "	Term unexpired.
1484	M...	H. W.....	12th " "	3 "	Discharged.
1468	M...	E. A.....	14th " "	3 "	"
1161	M...	D. R.....	21st " "	1 month	"
1488	M...	G. P.....	30th " "	3 months	Term unexpired.
1458	F....	M. H	9th July "	3 "	"
479	F....	E. W.....	27th " "	3 "	"
1512	M...	R. B.....	28th " "	3 "	"
370	F....	M. W	14th August "	3 "	Returned.
1474	M...	B. G. Y....	10th September "	3 "	Term unexpired.
1492	M...	J. J.....	25th " "	6 "	"

SUMMARY.

	M.	F.	Total.	M.	F.	Total.
Number to whom probational leave was granted	.....	.....	.....	16	6	22
Discharged, recovered.....	3	.....	3	.....	.....	.....
" improved.	1	2	3	.....	.....	.....
" unimproved	1	.....	1	.....	.....	.....
Died before expiration of leave	1	.....	1	.....	.....	.....
Returned to Asylum	5	2	7	.....	.....	.....
Absent on probation on 30th September, 1883	5	2	7	16	6	22

TABLE No. 10.

Shewing the Nature of Employment and the number of days' work performed by Patients during the year.

NATURE OF EMPLOYMENT.	Number of patients who worked.	Days worked.		
		Male.	Female.	Total.
Carpenter's shop	3	429	.....	429
Tailor's shop	4	950	.....	950
Shoe shop	2	617	.....	617
Engineer's shop	6	1609	.....	1609
Blacksmith's shop	2	350	.....	350
Mason work	1	300	.....	300
Repairing roads	.....	.....	.....	.....
Wood yard and coal shed	4	850	.....	850
Bakery	2	313	.....	313
Laundry	9	651	1486	2137
Dairy	4	.....	729	729
Butcher's shop and slaughter house	3	582	.....	582
Piggery and stables	3	583	.....	583
Painting	3	713	.....	713
Farm	15	4695	.....	4695
Garden	8	2340	.....	2340
Grounds	.....	.....	.....	.....
Stable	3	582	.....	582
Kitchen	5	417	800	1217
Dining rooms	27	2949	3927	6876
Officers' quarters	2	.....	429	429
Sewing rooms	14	.....	3445	3445
Knitting	20	.....	4301	4301
Mending	12	.....	1576	1576
Wards Halls	55	10109	6791	16900
Storeroom	1	304	.....	304
General	15	4417	.....	4417

TABLE NO. 11.

Shewing the Articles Made and Repaired During the Official Year Ending 30th September, 1883.

MALE DEPARTMENT.			FEMALE DEPARTMENT.		
ARTICLES.	Made.	Repaired.	ARTICLES.	Made.	Repaired.
Coats	127		Coats		250
Pants, Pairs	195		Pants, Pairs		723
Vests	54		Vests		73
Drawers, Pairs	43		Drawers, Pairs		158
Moleskin Suits	4		Aprons	343	1087
Overalls, Pairs	8		Bedticks	218	831
Long Boots, Pairs	9	17	Blankets		177
Coburghs	70	22	Chemises	320	1209
Leather Slippers, Pairs	170	15	Caps	2	58
Canvass	134		Counterpanes		189
Boots, Womens'	6	17	Curtains	41	
Bedticks, Strong	1		Carpet, Rag, yards	88	
Bedcovers	2		Dresses	231	1552
Sleigh Robes, lined and trimmed	2	2	Jackets	2	
Belts	3		Nightgowns		225
Carpets	2		Pillow Slips	432	616
Horse Collars		2	Pillow Ticks		88
Sets Harness		6	Petticoats	154	1156
Harness Straps	12	11	Shirts	273	1313
			Socks, Pairs	438	1469
			Socks, marked	438	
			Stockings, Pairs	275	2894
			Sheets	345	942
			Sunbonnets	32	
			Waists		21

Table No. 12.

Returns from the Farm and Garden, for the year ending 30th September, 1883.

			$ c.	$ c.
2370	Bunches	Parsley, Onions, Thyme, Sage, etc	$0 05	118 50
1580	"	Rhubarb	0 10	158 00
65	Bushels	Parsnips	0 60	39 00
20	"	Spinach	0 50	10 00
46	"	Green Peas and Beans	0 75	34 50
4	"	Salsify	1 50	6 00
39	"	Tomatoes	0 70	27 30
460	"	Carrots	0 30	138 00
148	"	Onions	1 00	148 00
3350	"	Potatoes	0 60	2010 00
100	"	Beets	0 50	50 00
450	"	Mangolds	0 30	135 00
6	"	Cucumbers	1 50	9 00
270	"	Apples	0 75	202 50
30	"	Plums	0 90	27 00
60	"	Barley	0 90	54 00
360	"	Oats	0 40	144 00
4	"	Beans	1 25	5 00
34	Quarts	Capsicums	0 10	3 40
1400	"	Currants, Gooseberrie, Strawberries, etc	0 08	112 00
3200	Heads	Cabbage and Cauliflowers	0 05	160 00
470	Roots	Celery	0 06	26 20
260	Dozens	Green Corn	0 10	26 00
14	"	Melons and Squashes	2 00	28 00
350	Pounds	Grapes	0 08	28 00
50	Tons	Hay	10 00	500 00
8	"	Straw	7 00	56 00
10	"	Corn Stalks	4 00	40 00
650	Loads	Green Fodder	0 50	325 00
7730	Gallons	Milk	0 20	1546 00
53	Little	Pigs sold, per Bursar		109 00
1	Large	Pig " "		30 00
7	Deacon	Skins " "		4 25
1	Cow	Hide		3 00
4394	Pounds	Pork killed and consumed	0 08	351 52
		Total		6664 17

TABLE No. 13.

PERIODS.	Duration of Insanity prior to Amission.	Length of residence of those remaining in Asylum on 30th September.	Periods of treatment of those who were discharged cured during the year.	Periods of treatment of those who were discharged improved during the year.	Periods of treatment of those who were discharged unimproved during the year.
Under 1 month	24	6	..	1	1
From 1 to 2 months	5	7	2	..	..
" 2 " 3 "	6	3	1	1	..
" 3 " 4 "	5	7	5	1	1
" 4 " 5 "	..	6	2	2	..
" 5 " 6 "	4	5	2	..	..
" 6 " 7 "	2	7	3	..	..
" 7 " 8 "	1	4	2	1	..
" 8 " 9 "	..	4	1	..	..
" 9 " 10 "	3	3	2	..	..
" 10 " 11 "	3	5	..	1	..
" 11 " 12 "	1	5	..	..	..
" 12 " 18 "	5	20	2	1	..
" 18 months to 2 years	1	22	1	2	..
" 2 to 3 years	3	35	..	3	1
" 3 " 4 "	3	31	1	..	..
" 4 " 5 "	4	36	1	..	..
" 5 " 6 "	2	34	..	2	1
" 6 " 7 "	2	21	..	..	..
" 7 " 8 "	3	11	..	..	..
" 8 " 9 "	2	9	..	..	..
" 9 " 10 "	2	9	..	1	..
" 10 " 15 "	2	114	..	..	..
" 15 " 20 "	2	24	..	..	..
" 20 years and upwards	4	21	..	..	..
Totals	94	449	25	16	4

ASYLUM FOR THE INSANE, HAMILTON.

HAMILTON, OCTOBER 1ST, 1883.

To the Inspector of Asylums and Public Charities, Toronto.

SIR :—I have the honour to submit the eighth Annual Report on the movements and condition of this Asylum for the official year ending September 30th, 1883.

On the 1st of October, 1882, the total number of patients in residence was 464, of whom 225 were men, and 239 women.

There were admitted during the year, a total of 173, of whom 77 were men, and 96 women.

52 men and 45 women, a total of 97, were admitted under Lieutenant-Governor's warrant, and 25 men and 51 women, a total of 76, were admitted by Medical certificates. There have been under treatment during the year 302 men and 335 women, total, 637.

The daily average population was 254.6 men, and 283.2 women, total, 537.8.

There were discharged, as recovered, 26 men and 14 women, total, 40 ; as improved, three men and three women, total, six ; unimproved, two men and three women, total, five. The total number of discharges, 51, 31 men and 20 women.

The number of deaths was 18 men and 14 women, total, 32 ; four men eloped, and three men were transferred to another asylum.

The number remaining at the end of the year was 246 men and 301 women, a total of 547 ; an increase of 83 as compared with last year.

The rate of recoveries based on the admissions, is 23 per cent. ; last year the recovery rate was 30.6 per cent. This calculation only includes recoveries, and not those who were discharged improved. The less favourable result this year is mainly due to the large number of admissions and the character of the patients admitted, the greater number of them, both male and female, being chronic and incurable, and their mental malady of long standing before admission to the Asylum was obtained.

The annual mortality, calculated on the whole number under treatmeut, is five per cent. ; in the previous year the ratio was nine per cent.

Probational leave was allowed to 21 men and 17 women with the following results :— 15 men and nine women, total, 24, were discharged recovered, two men improved, one woman unimproved ; one man died at home before expiry of term of probation. One man and six women were returned to the Asylum, and two men and one woman remain out on leave at this date.

The cost of maintenance per patient per week, inclusive of provisions and medicines, household expenses, clothing, salaries and wages, and the repair and alterations of buildings, has been two dollars and forty-four and a half cents.

Of the patients admitted during the year, no less a number than twelve were in the last stages of exhaustion, from senile decay and general debility, and died in from ten days to two months from the date of their admission.

The general health of the patients has been very good throughout the year, no accident of a serious nature has occurred, no suicide, although a large number of the inmates are strongly disposed to suicide, and several attempts have been frustrated by the vigilance of the attendants, and, as in past years, the Asylum has been singularly free from acute and epidemic diseases. Of all the deaths which occurred, it will be seen by reference to Table No. 6, that they were caused by organic disease of the brain, Phthisis and General Debility.

At the close of the official year, in September, 1882, the basement wards were vacated by the transfer of forty idiots of each sex to the Asylum for Idiots at Orillia ; this space was almost immediately filled by the admission of applicants who had long been awaiting vacancies, at their own homes, and some in gaols and, also by the transfer of twelve patients of each sex from the Toronto Asylum. Early in the present year the cottage formerly occupied by the Bursar was fitted up for the reception of patients, and nineteen quiet chronic cases, all females, were transferred to it from the Asylum. The cottage has a very pleasant location near the brow of the mountain, commanding a magnificent view of the city, the bay, and lake, and Burlington Heights in the distance.

The doors are kept open all day, and the patients roam at their pleasure on the Asylum grounds and in the beautiful grove of several acres extent in rear of the cottage. It is very pleasant to witness the comfort and home-like life enjoyed by these patients. There are suitable cases sufficient in the Asylum to extend this system to several cottages of similar capacity; and the cottage system should not exceed twenty patients. If the cottages are made much larger and the number of patients increased, it loses the home-like qualities and is but slightly different from the Asylum.

There is now in course of erection, a building called a cottage, but as it is 167 feet feet in length, and 45 in breadth, and will have a capacity of sixty patients, the name of cottage is scarcely applicable. The term "cottage" has been used to designate small detached buildings, exclusively for the accommodation of harmless, quiet, and chronic cases, but this building is intended to be in reality a hospital for the reception of and special treatment of acute cases, and is the first of its kind so far as I have been able to find out. The building in its architectural structure is supposed to be upon the latest and most approved plan. It is two stories in height, the central building contains receptionroom and offices, and attendants' rooms and an associated dining-room, where all the patients will dine. The corridors are spacious, with lofty ceilings, and are well lighted, and large alcoves, terminating in bow windows; there are single rooms and associated dormitories and day parlours. The building will be heated by steam and supplied with hot and cold water from the main Asylum system. It is expected that the building will be ready for occupation in June next. As the female wards are overcrowded, and the demand for the admission of women very urgent, this building will be used at first for patients of both sexes. When another Hospital of similar dimensions is erected the one will be for men and the other for women. The second building will be commenced early next spring.

A new building is in course of construction, and will be completed and ready for occupation as a laundry, in a short time. The present laundry has for some time been inconvenient and much too small. The old laundry, after undergoing some alterations, will be used as a kitchen, and will be an improvement upon the present small and badly lighted and ventilated kitchen.

The drainage under the Asylum is in a very bad condition. There is an average of six inches of water at all times standing under the floors in the store-rooms and basement wards. The joists, flooring, and wainscotting are rotting and falling in in many places and we are constantly repairing it to keep it in order. It is needless for me to say that this state of things renders the occupation of the basement extremly dangerous to the health of the occupants. The damp and musty smell in this part of the Asylum is sometimes very strong and disagreeable. There is certainly serious danger to be apprehended in the occupation of the basement as long as it is allowed to remain in this condition. I would again urge the necessity of something being done without delay to remedy this—either by making a new drain, if that be found practicable, or by filling in the space under the floors with concrete. The latter would probably in every respect be the best, as it would ensure dryness and there would be no place left for rats to lodge in.

The water-closet system has been thoroughly overhauled during the past summer; the old closets, which were very insufficient and wasteful of water, were removed, and in their place the trough system has been adopted; this system has now been in operation between three and four months and the result is, in every way, most satisfactory. It is neat and clean in appearance, and at no time is the slightest odour perceptible, and the saving of water—which is to us, an item of great importance—is very considerable. Under the old closet system we had to pump water from the city every day, Sundays included, since we have been using the troughs we pump one-fourth less time each day, and none on Sunday. The saving frem this alone in men's time, fuel, wear and tear of machinery, and in the purchase of water, which is sold to us by measue, will, in less than six months, compensate for the expenditure in making the alteration.

The inside of the buildings is well supplied with fire protecting apparatus, and the attendants, both male and female, are drilled in the use of them regularly once a week under the direction of the engineer. We are still, however, without any outside protection, and it is desirable that hydrants should be put in at several points around the buildings.

One attendant, who is a painter by trade, is regularly employed painting within the Asylum, he has the assistance of several patients, and the work of painting floors, walls, parlours, and dormitories is constantly going on.

Out of our total number of patients of both sexes, 335 are daily engaged in some kind of useful occupation. This number is a considerable increase over previous years; the work done by the men is comprised in road making, and breaking stone, farm-work, levelling and grading the land and laying out the grounds; a large amount of this kind of work has been done during the past year. The women are employed in the various departments of domestic work; in the sewing-room, laundry, and kitchen. We have pleasantly located and spacious airing courts, in which a certain class of the patients spend the greater part of the day—and large walking parties are formed everey forenoon and afternoon, and the the time is spent strolling on the grounds.

The farm and garden has been a failure this year, owing to the heavy and long continued rains in the spring and early summer; it was late before the ground could be got in order for the seed, and after it was put in the rain continued, and the seed rotted in the ground. The fruit also has been a failure both in quantity and quality. There is now a very urgent necessity for the purchase of more land. Our pasturage has lain so long uncultivated that the grass is run out by weeds and thistles. I have time and again requested that a few hundred dollars be spent in fencing the eastern portion of the land, so that it could be cultivated instead of bing allowed to lie a waste, not even fit for pasturage, but my appeals have been in vain. Unless more land is procured we will not be able to graze our present number of milch cows next year, and instead of reducing our number we should at least double it in order to have even a very moderate supply of milk for our patients.

The farm buildings are in very unpleasant proximity to the Asylum, and the new Hospital Buildings being erected still nearer, renders their removal still more urgent. In certain conditions of the atmosphere and the direction of the wind, the odour from the stables and piggeries is very disagreeably perceptible within the Asylum. As the farm buildings are cheap wooden structures, I would recommend that an appropriation be asked from the Legislature at its next session for the erection of substantial brick buildings in keeping with the other buildings on the property, and at a proper distance from the Asylum. I would also recommend that a cottage be built for the Farmer, as, at present, he does not live on the premises and it is very desirable that he should do so.

The amusements provided for the patients have been about the same as in previous years. The musical talent of Hamilton are extremely generous to us and entertain us with frequent concerts, which are highly appreciated and for which patients and all connected with the Asylum feel deeply grateful. Besides the concerts, which were given with great regularity during the season, the patients had a weekly dance during the months from October to May inclusive.

Our acknowledgments are also sincerely tendered to the gentlemen who have so long and faithfully conducted the religious services in the Asylum, viz.: The Rev. Mr. Bull, and Messrs. Gaviller and Freeman; early in the year Mr. Taylor was compelled by ill-health to retire, his absence was marked and sincerely regretted by many of the patients. For some time past, Ministers belonging to the Evangelical Alliance have taken part in the services; an arrangement which gives great satisfaction, as all denominations of Christians are represesented in our population.

During my absence of four months, in consequence of ill-health, the duties of Superintendent were performed by Dr. Stephen Lett, Assistant Medical Superintendent of the Toronto Asylum.

Dr. R. R. Wallace was, on the 15th of September last, temporarily appointed as a Medical Assistant; with this exception, no change has taken place during the year in the medical or official staff, and it gives me pleasure to record my appreciation of the efficient services and harmonious co-operation of officers and employees in every department of the service.

I have the honour to be, Sir,
Your obedient servant,
J. M. Wallace, M.D.
Medical Superintendent.

ANNUAL STATISTICAL REPORT

Of the operations of the Asylum for Insane, Hamilton, for the year ending 30th September, 1883.

TABLE No. 1,

Shewing movements of Patients in the Asylum for the Official Year ending 30th September, 1883.

	Male.	Female.	Total.	Male.	Female.	Total.
Remaining October 1st, 1882	.....	.....	.....	225	239	464
Admitted during year :						
By Lieutenant-Governor's warrant	52	45	97			
" medical certificate	25	51	76			
				77	96	173
Total number under treatment during year	.....	.....	.....	302	335	637
Discharges during year :						
As recovered	26	14	40			
" improved	3	3	6			
" unimproved	2	3	5			
Total number of discharges during year	31	20	51			
Died	18	14	32			
Eloped	4	.....	4			
Transferred	3	.....	3			
				56	34	90
Remaining in Asylum, 30th Sept., 1883	.....	.....	.....	246	301	547
Total number admitted since opening of Asylum				516	525	1041
" discharged	129	136	265			
" died	121	85	206			
" eloped	17	.....	17			
" transferred	3	3	6			
				270	224	494
" remaining, 30th Sept., 1883	.....	.....	.....	246	301	547

TABLE No. 2.

Shewing the maximum and minimum number of Patients resident in the Asylum, the total number of days' stay of Patients, and the daily average number of Patients in the Asylum, from the 1st October, 1882, to 30th September, 1883.

	Male.	Female.	Total.
Maximum number of patients in residence (on the 11th of June, 1883) ...	264	298	562
Minimum " " (on the 20th of October, '82)..	223	240	463
Collective days' stay of all patients in residence during year	92929	103368	196297
Daily average population	254.6	283.2	537.8

	Admissions of Year.			Total Admissions since Opening.		
	Male.	Female.	Total.	Male.	Female.	Total.
SOCIAL STATE.						
Married.....	29	50	79	228	295	523
Widowed	.....	.....	.....	.....	.....	.....
Single	48	46	94	288	230	518
Not reported	.....	.....	.....	.....	.....	.....
Total	77	96	173	516	525	1041
RELIGION.						
Presbyterians	15	20	35	111	100	211
Episcopalians	15	20	35	113	95	208
Methodists.....	16	17	33	101	97	198
Baptists	1	10	11	17	30	47
Congregationalists	.....	1	1	.....	3	3
Roman Catholics.....	22	22	44	113	146	259
Mennonites	.....	.....	.....	5	2	7
Quakers.	.....	.....	.....	3	3	6
Infidels	.....	.....	.....	1	.....	1
Other denominations	4	3	7	21	27	48
Not reported.....	4	3	7	31	22	53
Total	77	96	173	516	525	1041
NATIONALITIES.						
English.....	9	8	17	90	59	149
Irish	16	22	38	89	141	230
Scotch	7	7	14	45	51	96
Canadian	39	50	89	244	232	476
United States	1	2	3	9	6	15
Other Countries	3	4	7	18	22	40
Unknown.....	2	3	5	21	14	35
Total	77	96	173	516	525	1041

TABLE No. 3.

Shewing the Counties from which Patients have been admitted up to 30th September, 1883.

COUNTIES.	Admitted During Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Algoma District				1	2	3
Brant	6	8	14	17	21	38
Bruce				1	4	5
Carleton				9	7	16
Dufferin		2	2		2	2
Elgin		1	1	1	5	6
Essex					1	1
Frontenac				2	6	8
Grey	2	1	3	21	16	37
Haldimand	2	3	5	14	13	27
Halton	8	1	9	17	15	32
Hastings				4	3	7
Huron				3	7	10
Kent				1	4	5
Lambton				3	2	5
Lanark				1	1	2
Leeds and Grenville				4	5	9
Lennox and Addington				10		10
Lincoln	4	5	9	24	30	54
Middlesex				9	4	13
Muskoka District						
Norfolk	2	9	11	10	19	29
Northumberland and Durham	2	2	4	25	27	52
Ontario				18	23	41
Oxford	1	1	2	3	1	4
Peel		2	2	9	10	19
Perth				1	3	4
Peterborough	3	1	4	6	10	16
Prescott and Russell				3		3
Prince Edward				4	2	6
Renfrew				2	2	4
Simcoe	15	13	28	53	39	92
Stormont, Dundas and Glengarry				13	9	22
Victoria		2	2	8	9	17
Waterloo	2	5	7	9	15	24
Welland	3	2	5	17	14	31
Wellington	14	13	27	26	27	53
Wentworth	10	21	31	76	78	154
York	2	4	6	90	89	179
Not classed	1		1	1		1
Total	77	96	173	516	525	1041

TABLE No. 4.

Shewing the Counties from which Warranted Cases have been admitted up to 30th September, 1883.

COUNTIES.	Admitted During Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Algoma District						
Brant	4	4	8	10	8	18
Bruce				1	1	2
Carleton				8	3	11
Dufferin		2	2		2	2
Elgin		1	1		1	1
Essex					1	1
Frontenac				2	1	3
Grey	2		2	16	9	25
Haldimand	2		2	6	3	9
Halton	4		4	10	4	14
Hastings				4	2	6
Huron					1	1
Kent						
Lambton				1		1
Lanark				3	1	4
Leeds and Grenville				3	4	7
Lennox and Addington				9		9
Lincoln	3	3	6	20	14	34
Middlesex				3		3
Muskoka District						
Norfolk	1	4	5	5	10	15
Northumberland and Durham		2	2	15	13	28
Ontario				14	15	29
Oxford		1	1	1	1	2
Peel				3	4	7
Perth					1	1
Peterborough	3	1	4	6	7	13
Prescott and Russell				3		3
Prince Edward				2	2	4
Renfrew				2		2
Simcoe	12	5	17	41	18	59
Stormont, Dundas and Glengarry				11	3	14
Victoria		2	2	6	8	14
Waterloo	1	1	2	5	2	7
Welland	2	1	3	13	7	20
Wellington	9	4	13	12	4	16
Wentworth	7	10	17	26	21	47
York	2	4	6	68	52	120
Not classed						
Total admissions	52	45	97	329	223	552

TABLE NO. 5.

Shewing the length of Residence in the Asylum of those discharged during the year.

No.	Initials.	Sex.	When Admitted.	When Discharged.	Remarks.
488	E. A. B....	M.	May 27th, 1880.....	Oct. 20th, 1882	Improved.
681	M. J. L....	F.. ...	April 28th, 1881.....	Nov. 14th, "	Recovered.
842	C. W. W...	M.	July 12th, 1882.....	" 30th, "	Improved.
819	L. P.....	M.	May 3rd, 1882	" " "	Recovered.
837	M. F.....	F.....	June 21st, 1882.....	" " "	"
463	A. S.....	F.....	April 13th, 1880.....	Dec. 9th, "	"
829	M. M.....	F.....	June 30th, 1882	" 14th, "	"
737	J. D.	M.	August 11th, 1881.....	" 20th, "	"
753	F. J.....	M.	October 11th, 1881	Jan. 10th, 1883	"
918	E. T.	F.....	October 27th, 1882..	" 19th, "	"
856	B. M	F.....	August 11th, 1882.....	" 23rd, "	"
525	A. R.	F.....	July 19th, 1880.....	Feb. 8th, "	"
861	A. R.... ..	M.	September 7th, 1882	" 10th, "	"
825	D. B.....	M. ..	May 23rd, 1882.....	" 15th, "	"
818	C. C.	M.	May 2nd, 1882	" " "	"
680	P. D.	M.	April 25th, 1881	" 21st, "	Unimproved.
849	D. T.....	M.	August 4th, 1882.....	Mar. 9th, "	Recovered.
935	M. E. S...	F.....	November 11th, 1882	April 5th, "	"
557	I. R.....	M.	August 25th, 1880.....	" 11th, "	"
834	G. L. M...	M.	June 14th, 1882	" 20th, "	"
965	G. S.	M. ...	February 9th, 1883..... .	" " "	"
871	V. H.....	F.....	October 23rd, 1882	" 21st, "	"
474	H. D.....	F.....	April 27th, 1880.....	" 23rd, "	Improved.
431	B. D. ...	F.....	February 20th, 1880.....	" 27th, "	"
269	C. S.	F.....	March 31st, 1879..... ..	May 21st, "	Unimproved.
950	M. H.....	F.....	December 19th, 1882.....	" 29th, "	"
253	C. S.	F.....	March 17th, 1879.....	June 15th, "	Recovered.
353	H. W.....	M.	August 14th, 1879.....	" 16th, "	"
980	I. E..... ..	M. ...	March 27th, 1883.....	" " "	"
848	C. W.....	M.	August 4th, 1882.....	" 21st, "	"
846	T. A. R....	M.	July 27th, 1882..... ..	" " "	"
850	M..E. R...	F... .	August 5th, 1882.....	" 30th "	Improved.
975	P. K.	M.	March 16th, 1883... ...	July 2nd, "	Recovered.
898	P. C.....	M.	August 25th, 1882.....	" 6th, "	"
1024	E. L. S....	M.	July 8th, 1883.....	" 27th, "	"
981	M. R.....	M. ...	April 10th, 1883	" 31st, "	"
971	H. S.....	F.....	February 21st, 1883	" " "	Unimproved.
920	O. H	F.....	October 27th, 1882.....	Aug. 13th, "	Recovered.
966	A. M. B...	F.....	February 10th, 1883.....	" 22nd, "	"
1016	A. E	M.	June 4th, 1883	" 27th, "	Unimproved.
802	W. E.....	M.	February 9th, 1882.....	" 28th, "	Recovered.
1001	S. J. W....	M.	May 1st, 1883.....	Sept. 1st, "	"
897	W. F	M.	August 24th, 1882..	" " "	"
370	J. C.....	M.	September, 18th, 1879	" 3rd, "	"
961	C. H. P ...	M.	January 26th, 1883.....	" " "	"
840	M. E. S ...	F.....	June 27th, 1882	" " "	"
866	G. M.....	M.	September 25th, 1882.....	" 4th, "	"
616	J. S.....	M.	November 30th, 1880	" 17th, "	Improved.
807	A. B.....	M.	March 22nd, 1882	" " "	Recovered.
854	S. M.....	F.....	August 16th, 1882.....	" " "	"
979	R. M.....	M.	March 26th, 1883.....	" 26th, "	"

TABLE NO. 6.

Shewing Age, Length of Residence and Proximate Cause of Death of those who died during the year ending 30th September, 1883.

No.	Initials.	Sex.	Age.	Date of Death.	Residence in Asylum.			Proximate Cause of Death.
					Years.	Months.	Days.	
704	R. H. S....	M. ..	30	Oct. 17th, 1882	1	4	7	Epilepsy.
287	B. F.....	F....	43	" 25th, "	3	6	.....	General Debility.
815	L. S.....	F....	45	" 30th, "	.....	5	15	Exhaustion of Mania.
891	J. B.....	M. ..	54	Nov. 5th, "	.....	.....	13	General Debility.
756	M. D.....	M. ..	44	" 11th, "	1	.....	22	"
765	M. M.....	F..	26	" 25th, "	1	.....	17	Phthisis.
788	J. S. R....	M. ..	84	Dec. 30th, "	.....	11	13	Senile Decay.
106	E. G. ..	F....	77	Jan. 14th, 1883	6	8	11	"
955	H. P. Z....	M. ..	64	" 17th, "	.....	.....	16	Dropsy.
36	J. C.....	M. ..	56	" 28th, "	6	10	5	Cardiac Disease.
58	M. G	F....	79	Feb. 8th, "	6	10	15	Senile Decay.
933	J. P.....	M. .	21	" " "	.....	2	28	Exhaustion of Mania.
791	W. F.....	M. ..	47	Mar. 10th, "	1	1	22	Phthisis.
764	S. J.....	M. .	56	" 27th, "	1	4	25	General Paralysis.
710	M. A. F...	F....	36	April 14th, "	1	9	27	Phthisis.
113	A. M.....	F....	67	" 15th, "	6	11	12	Senile Decay.
960	L. B.....	F....	30	" 17th. "	.....	2	22	Phthisis.
900	J. T.	M. ..	38	" 23rd, "	... .	5	7	General Paralysis.
466	J. G.....	M. ..	53	" 27th, "	3	.....	11	Marasmus.
997	J. W.....	M. ..	58	May 7th, "	.. ....	... .	10	General Debility.
311	T. C.....	M	38	" 19th, "	3	11	18	General Paralysis.
573	M. E	F...	86	June 2nd, "	2	8	7	Senile Decay.
1011	J. S.....	M. ..	44	" 8th, "	.....	.....	21	Choked with food.
973	M. McK ..	F....	28	" 11th, "	.....	3	17	Marasmus.
862	E. H.....	M. ..	26	" 12th, "	.....	9	5	"
104	S. D.....	F....	68	" 15th, "	7	1	12	Senile Decay.
1008	A. S.	F....	42	July 8th, "	.....	1	23	Chronic Diarrhœa.
696	G. C.....	M. ..	62	" 19th, "	2	2	.....	General Debility.
822	M. B	F....	56	" 27th, "	1	2	14	"
631	C. G.....	M. ..	43	Aug. 12th, "	2	7	13	Exhaustion of Mania.
661	R. M.....	F....	62	Sept. 19th, "	2	6	16	Cardiac Disease.
654	B. L. .	M. ..	41	24th, "	2	7	9	General Paralysis.

TABLE NO. 7.

Shewing Trades, Callings and Occupations of Patients admitted into the Asylum.

Trades, Callings and Occupations.	During the Year.			During Former Years.			Total.
	Males.	Females	Total.	Males.	Females	Total.	
Architects				1		1	1
Bricklayers				2		2	2
Blacksmiths	1	1	2	3	1	4	6
Brewers				1		1	1
Builders				1		1	1
Barbers				2		2	2
Broom-makers	1		1				1
Brakesmen and Wives					1	1	1
Baggage-men	1		1				1
Commercial travellers				3		3	3
Consuls				1		1	1
Confectioners				1		1	1
Coopers				1		1	1
Carpenters	3		3	20		20	23
Clerks and Wives		2	2	14	1	15	17
Clergymen				4		4	4
Carriage-makers	1		1				1
Cigarmakers				1		1	1
Carters and Wives		1	1	1		1	2
Domestic servants, all kinds		18	18		214	214	232
Dressmakers		2	2		1	1	3
Druggists				2		2	2
Doctors and Wives	1	1	2				2
Engineers and Wives		1	1	1		1	2
Editors				1		1	1
Farmers and Wives	20	25	45	148	19	167	212
Fishermen				1		1	1
Gardeners				3		3	3
Grocers				2		2	2
Glass-blowers and Wives				1	1	2	2
Hostlers and Wives		1	1	1		1	2
Harness-makers	2		2				2
Housekeepers		8	8		68	68	76
Hair-dressers		1	1				1
Inn-keepers	1		1	5		5	6
Labourers and Wives	28	9	37	121	2	123	160
Lawyers				1		1	1
Lathers	1		1				1
Machinists and Wives	1	1	2	3		3	5
Moulders				1		1	1
Merchants				2	1	3	3
Mechanics				14		14	14
Music-teachers		1	1				1
Marble-cutters				2		2	2
No occupation	2	12	14				14
Night-watchmen				1		1	1

TABLE NO. 7.—*Continued.*

Shewing Trades, Callings and Occupations of Patients admitted into the Asylum.

Trades, Callings and Occupations.	During the Year.			During Former Years.			Total.
	Males.	Females	Total.	Males.	Females	Total.	
Nurses					1	1	1
Not stated	2	2	4				4
Photographers				2		2	2
Painters	1		1	4		4	5
Printers	1		1	1		1	2
Peddlers	2	1	3	2		2	5
Private Secretary	1		1				1
Railway employés and Wives	1	1	2				2
Spinsters		1	1				1
Sailors				5		5	5
Students				1		1	1
Spinners		1	1	3	2	5	6
Saddlers				2		2	2
Shoemakers	1		1	7		7	8
Seamstresses		1	1		13	13	14
Soldiers				1		1	1
Surveyors				1		1	1
Sail and tent-makers	1		1				1
Teachers	2	1	3	6	5	11	14
Tinsmiths and Wives and Daughters	1	2	3				3
Tailors and Wives		1	1	4	2	6	7
Tanners				1		1	1
Vinegar-makers	1		1				1
Weavers and Wives		1	1	3	3	6	7
Waggon-makers				1		1	1
Waiters				1		1	1
Unknown or other employments				28	94	122	122
Total	77	96	173	439	429	868	1041

TABLE NO. 8.

Shewing Causes of Insanity.

CAUSES OF INSANITY. In respect of the admissions for the year ending 30th September, 1883.	Number of instances in which each cause was assigned.					
	As Predisposing Cause.			As Exciting Cause.		
	Male.	Female.	Total.	Male.	Female.	Total.
Moral.						
Domestic troubles, including loss of relatives or friends				1	12	13
Religious excitement				0	4	4
Adverse circumstances, including business troubles				6	2	8
Love affairs, including seduction						
Mental anxiety, "worry"				2	1	3
Fright and nervous shocks				1	1	2
Physical.						
Intemperance in drink				5	1	6
Intemperance, sexual						
Venereal disease						
Self-abuse, sexual				9	1	10
Over-work				1		1
Sunstroke				3	1	4
Accident or injury				1	1	2
Pregnancy						
Puerperal						
Lactation						
Puberty and change of Life						
Uterine disorders					2	2
Brain disease, with general paralysis						
Brain disease, with epilepsy				1		1
Other forms of brain disease				1	1	2
Other bodily diseases or disorders, including old age					3	3
Fevers				1	1	2
Hereditary.						
With other ascertained cause in combination	11	9	20			
With other combined cause not ascertained	5	13	18			
Congenital.						
With other ascertained cause in combination						
With other combined cause not ascertained		1	1			
Unknown	29	42	71			
Total	45	65	110	32	31	63

TABLE No. 9.

Shewing the Probational Discharges and the Result thereof.

Reg. No.	Sex.	Initials.	Date of Probational Discharge.	Term of Probation.	Result.
463	F.....	A. M. S...	October, 9th, 1882.....	2 months.....	Discharged Recovered.
842	M.....	C. W. W..	" 23rd, "	1 month	" Improved.
706	M.....	H. W.....	" 26th, "	2 months.....	Returned Unimproved.
837	F.....	M. F.....	" 31st, "	1 month	Discharged Recovered.
856	F.....	B. M.....	November 18th, "	2 months.....	" "
851	F.....	M. R.....	" 20th, "	3 "	Returned Unimproved.
861	M.....	A. R.....	December 4th, "	2 "	Discharged Recovered.
818	M.....	C. C.....	" 4th, "	2 "	" "
849	M.....	D. T.....	" 28th, "	2 "	" "
269	F.....	C. S.....	February 6th, "	3 "	" Unimproved.
680	M.....	P. D.....	" 8th, "	3 "	Died at home from Phthisis.
834	M.....	G. L. M..	" 10th, "	2 "	Discharged Recovered.
935	F.....	M. E. S...	" 17th, "	2 "	" "
848	M.....	C. W.....	April 5th, "	2 "	" "
846	M.....	T. A. R...	" 14th, "	2 "	" "
353	M.....	H. W.....	" 23rd, "	2 "	" "
958	F.....	M. G	May 2nd, "	1 month	Returned.
253	F.....	C. S.....	" 8th, "	1 "	Discharged Recovered.
920	F.....	O. H.....	" 25th, "	2 months	" "
898	M.....	P. C.....	" 30th, "	1 month	" "
616	M.....	J. S.....	June 6th, "	1 "	" Improved.
942	F.....	E. M.....	" 9th, "	2 months	Returned.
802	M.....	W. E.....	" 15th, "	2 "	Discharged Recovered.
840	F.....	M. E. S...	" 27th, "	2 "	" "
838	F.....	C. F.....	July 2nd, "	1 month	Returned.
923	F.....	D. M.....	" 4th, "	1 "	"
866	M.....	G. M.....	" 7th, "	2 months	Discharged Recovered.
966	F.....	A. B.....	" 10th, "	1 month	" "
854	F.....	S. M.....	" 14th, "	2 months	" "
961	M.....	C. H. P...	" 25th, "	1 month	" "
897	M.....	W. F.....	" 25th, "	1 "	" "
370	M.....	J. C.....	August 2nd, "	1 "	" "
1005	F.....	M. J. A...	" 10th, "	1 "	Returned.
807	M.....	A. B.....	" 11th, "	1 "	Discharged Recovered.
1001	M.....	S. J. W....	" 27th, "	2 weeks	" "
634	M.....	J. J.....	September 4th, "	2 months.....	At home, leave unexpired.
864	M.....	W. S.....	" 15th, "	3 "	" " "
962	F.....	A. M.....	" 15th, "	2 "	" " "

SUMMARY OF PROBATIONAL DISCHARGES.

	Male.	Female.	Total.	Male.	Female.	Total.
Number to whom probational leave was granted	21	17	38	.....	.....	.....
Discharged, recovered.....	.....	.....	.....	15	9	24
" improved.....	.....	.....	.....	2	.....	2
" unimproved	.....	.....	.....	.....	1	1
Died before expiration of leave	.....	.....	.....	1	.....	1
Returned to Asylum	.....	.....	.....	1	6	7
Absent on probation on 30th September, 1883.....	.....	.....	.....	2	1	3
	21	17	38	21	17	38

TABLE NO. 10.

Shewing the nature of employment and the number of day's work performed by patients during the year.

NATURE OF EMPLOYMENT.	Number of Patients who worked.	Days Worked.		
		Male.	Female.	Total.
Carpenter's shop	4	481	....	481
Tailor's shop	2	325	....	325
Engineer's shop	5	1195	....	1195
Repairing roads	20	659	....	659
Wood yard and coal shed	20	3032	....	3032
Bakery	2	335	....	335
Laundry	18	1460	3966	5426
Dairy	4	1460	....	1460
Butcher's shop and slaughter house	1	312	....	312
Piggery	2	730	....	730
Painting	4	809	....	809
Farm	10	558	....	558
Garden	20	1646	....	1646
Grounds	18	1083	....	1083
Stable	1	365	....	365
Kitchen	11	1752	2160	3912
Dining rooms	16	1460	4008	5468
Sewing rooms	12	....	4134	4134
Knitting	20	....	6087	6087
Mending	7	....	2332	2332
Wards	81	11320	9303	20623
Storeroom	7	431	1654	2085
General	21	2190	2886	2076
Quarry	29	1607	....	1607
Total	335	33210	36530	69740

TABLE NO. 11.

Shewing the articles made and repaired in the Sewing Room, and by the Tailor, during the year ending September 30th, 1883.

ARTICLES.	Made.	Repaired.	ARTICLES.	Made.	Repaired.
Aprons	345	300	Pants	230	780
Bed-ticks	412	120	Pillow-slips	608	54
Blankets	....	123	Pillow ticks	20	....
Braces (pairs)	115	....	Pudding-cloths	60	....
Breakfast shawls	31	....	Sheets	641	140
Canvas jackets	6	4	Shirts	180	908
Caps	42	....	Shrouds	44	....
Carpet balls	640	....	Skirts	298	250
Chemises	54	720	Smocks	5	....
Coats	94	520	Socks (pairs)	502	3890
Combinations	6	20	Stockings (pairs)	408	1260
Coverlets	....	72	Sun bonnets	20	....
Drawers (pairs)	24	108	Table cloths	6	....
Dresses	334	960	Table napkins	24	....
Hair pillows	121	....	Toilet covers	10	....
Hair mattresses	95	....	Towels	409	....
Handkerchiefs	197	....	Underwaists	30	....
Jackets	112	....	Vests	90	170
Mitts	95	30	Window blinds	43	....
Night caps	28	....			
Night gowns	29	....	Total	6421	10429
Overalls	13	....			

TABLE No. 12.

PERIODS.	Duration of insanity prior to admission.	Length of residence of those remaining in Asylum on 30th September.	Periods of treatment of those who were discharged cured during the year.	Periods of treatment of those who were discharged improved during the year.	Periods of treatment of those who were discharged unimproved during the year.
Under 1 month	40	4	1	..	..
From 1 to 2 months	21	7	..	..	..
" 2 " 3 "	14	8	4	..	1
" 3 " 4 "	7	5	1	..	..
" 4 " 5 "	8	15	2	1	..
" 5 " 6 "	6	15	4	..	2
" 6 " 7 "	8	3	4	..	..
" 7 " 8 "	2	8	2	..	..
" 8 " 9 "	1	18	2	..	..
" 9 " 10 "	1	12	2	..	..
" 10 " 11 "	3	12	4	1	..
" 11 " 12 "	1	51	1	..	..
" 12 " 18 "	14	13	6	..	1
" 18 months to 2 years	2	18	2	..	..
" 2 to 3 years	7	70	2	3	..
" 3 " 4 "	5	85	2	1	..
" 4 " 5 "	1	66	1	..	1
" 5 " 6 "	7	5	..	..	..
" 6 " 7 "	2	8	..	..	..
" 7 " 8 "	3	124	..	..	..
" 8 " 9 "	..	..	..	..	..
" 9 " 10 "	..	..	..	..	..
" 10 " 15 "	4	..	..	..	..
" 15 " 20 "	2	..	..	..	..
" 20 years and upwards	..	..	..	..	..
Not stated	14	..	..	..	..
Totals	173	547	40	6	5

ASYLUM FOR IDIOTS, ORILLIA.

ORILLIA, 1st OCT., 1883.

To the Inspector of Asylums and Public Charities:

SIR,—I have the honour, herewith, to transmit the Seventh Annual Report of the operations of this Asylum.

At the close of last year we had in residence 234 persons, of whom 120 were males, and 114 females. The admissions for the year were fifteen males, and nine females, total twenty-four—all by the ordinary process, except one male, admitted by Lieutenant-Governor's Warrant. The total number under care during the year was 258, viz., 135 males, and 123 females.

There were discharged, or rather taken home by friends, three males and two females; transferred to the Hamilton Asylum, one male, and eloped, one male, total, seven.

The deaths amount to twenty; eight being males and twelve females; a large percentage of seven and three-quarters.

The total number of deaths, discharges, transferred, and eloped, is thirteen males, and fourteen females, total, 27, which, deducted from 258, leaves in residence to-day, 231, of whom 122 are males and 109 females.

Applications for Admission.

On the 1st of October, last year, I had on my register sixty-two applications for admission; thirty-nine males and twenty-three females. The number to-day is 109, of whom sixty-nine are males and forty-six females—an increase of forty-seven. If we add the twenty-four who were admitted during the year we find the applications were in all seventy-one. Two questions naturally present themselves here. 1st. What is to be done with this constant increase of applications? and, 2nd. Is idiocy increasing in Ontario at a greater ratio than the natural population? The first of these questions I will leave for the Government and Legislature to answer, and the second I would say, no. By referring to table No. 3 it will be seen that some counties have sent no idiots to this Institution, while many more have sent very few. If we take such representative counties as Grey, Huron, Ontario and Simcoe, and compare the number sent by them, with the entire province, our total admissions since the opening of the Asylum should have been 500 instead of 360—that is, if we had had room. The presumption, of course, is, that the ratio of idiocy is the same over the whole province, but that many counties have not, heretofore, availed themselves of the privileges of the institutions—one chief reason being that its nature and character have not been sufficiently known. In looking over the applications at present to hand, I find the majority of them are from three counties.

In the report which I had the honour to present in 1877, I stated that in Ontario we had at least 2,000 idiots and imbeciles, assuming the percentage to be the same here, as in other counties with similar characteristics. With a population of 2,000,000, which no doubt we have now, we can safely place our idiot population at 2,500, which is 1 to every 800, the same as in the great states of the neighbouring Republic. In England the ratio is 1 to 771. The large number of applications on file is no evidence that idiocy is on the increase, or rather that it is increasing faster than the general population.

Work.

Although I have returned eighty-seven inmates as having worked during the year, with an aggregate number of days worked of 24,797, it must not be supposed that these represent full days work, but rather that the eighty-seven persons performed some portion of work on that number of days. It is satisfactory that we can even make such a showing as this, but it is only a part of what might be done, if we had a farm and workshop connected with the Institution. There are many here now, who could be made

self-supporting, if facilities were afforded us. And altogether apart from this the condition of the inmates would be greatly improved, and their happiness vastly increased, as well as the usefulness of the institution made more patent to the public.

Improvements.

As we confidently expect to be provided with new buildings soon, we have been modest in our demands for improvements, and very little has been expended outside of what was necessary to keep the house and surroundings in fairly good repair. A very commodious airing shed, however, was erected in the boys play-ground; the root houses have been improved and made frost-proof; a new Cameron pump has been purchased and placed in position; new floors have been laid in the day-rooms, and the green house has been re-built and re-arranged. This latter was rendered necessary by the fact of its having been partially destroyed by fire last winter.

Amusements.

We continue to amuse our poor inmates as best we can, but owing to the want of an amusement hall this is attended with much difficulty in the winter months. I have to complain of the indifference of the citizens of Orillia to our very existence in their midst. While in other towns and cities, where public institutions are located, different churches and societies vie with each other in the matter of giving entertainments and amusement, for the benefit of the unfortunate inmates, here in Orillia they are wholly ignored. Indeed our experience has been, that instead of being helped we are rather hindered in this respect. The churches err in other respects as well, for we have ministers of the gospel here who never enter our doors, notwithstanding the fact that we have many inmates who would enjoy and profit by a timely word from them. We have editors of newspapers, too, who are not at all sparing with their criticism, who have never been within our gates, and consequently cannot know anything of our work. Our town council stubbornly refuse to improve, much less to beautify the streets leading to our grounds. In short, we are treated as if our building was a pest-house, and our inmates vile, repulsive, if not absolutely dangerous creatures.

New Buildings.

It is clear that something must be done in the way of providing better accommodation for the unfortunates who are sent to us to be cared for, although the cottage has answered fairly well as a temporary expediency, and its management conducted with every reasonable care, making it as little obnoxious to the public as our circumstances will permit, yet it must be admitted that it comes lamentably short of being a suitable auxiliary to, even, an idiot asylum.

I would, therefore, again refer to the absolute necessity for new buildings, with increased accommodation. However, well this asylum met the want felt when first opened, and for three or four years after, it cannot be denied that its usefulness for the purpose for which it was designed, is now gone—and the time has arrived when something must be done to make it more in keeping with the demands of the country, for the admission of applicants, as well as establishing a training school for the benefit of the hundreds of weak minded children scattered over the land. I have urged this latter matter so often that I will now do nothing more than merely call your attention to it. I may, however, remark that we have quite a large number of suitable children much in need of a school. At present we can do very little more than care for their physical wants, such as is done for the chronic insane in other asylums. It is positively sinful to keep them so, without proper efforts being made to raise them in the scale of intelligence. We cannot make these efforts now, for two good reasons—want of room and want of skilled teachers. Let the Government and the Legislature supply us with these, and a vast improvement will soon be made in the appearance, condition, and happiness of our children. This idea of training weak-minded children is no longer an experiment. Its accomplishment is recognized, and admitted by some of the best minds in Europe and America.

Obit.

I may be pardoned for referring to the death of Dr. H. B. Wilbur, late Supt. of the Asylum for Idiots at Syracuse, N. Y., which occurred last May. Dr. Wilbur was the first on this continent who essayed the difficult task of educating idiots, by starting a private school at Barre, Mass., in July, 1848. Subsequently he removed to Albany, N. Y., where an experimental school was established, and from which resulted the institution at Syracuse, which was built in 1851; and which was presided over by its intelligent founder, down to the bright May morning when he was called to his rest. He was the wise and generous counsellor of the various States that have since established similar institutions. In the face of difficulties and prejudices, which, to an ordinary man would seem insuperable, he forced from the nation a recognition of so important a work, as seizing an arrested development of intelligence, and building it up—if not, indeed, in many cases, almost creating it. This distinguished specialist, ere his spirit took its flight, saw many noble institutions doing a grand work for its poor unfortunates, who so largely commanded the tender solicitude of his generous nature.

I have the honour to be, Sir,

Your obedient servant,

A. H. Beaton,

Medical Superintendent.

ANNUAL STATISTICAL REPORT.

Of the operations of the Asylum for Idiots, Orillia, for the year ending 30th September, 1883.

TABLE No. 1.

Shewing movements of inmates in the Asylum for the official year ending 30th September, 1883.

	Male.	Female.	Total.	Male.	Female.	Total.
Remaining October 1st, 1883				120	114	234
Admitted during year :—						
By Lieutenant-Governor's warrant	1		1			
" medical certificate	14	9	23			
				15	9	24
Total number under treatment during year				135	123	258
Discharges during year :—						
As recovered						
" improved						
" unimproved	3	2	5			
Total number of discharges during year	3	2	5			
Died	8	12	20			
Eloped	1		1			
Transferred	1		1			
				13	14	27
Remaining in Asylum, 30th September, 1883				122	109	231
Total number admitted since opening of Asylum				190	170	360
" discharged	14	8	22			
" died	52	53	105			
" eloped	1		1			
" transferred	1		1			
				68	61	129
" remaining, 30th September, 1883				122	109	231

TABLF No. 2.

Shewing the maximum and minimum number of Patients resident in the Asylum, the total number of days' stay of Patients, and the daily average number of Patients in the Asylum, from the 1st October, 1882, to 30th September, 1883.

	Male.	Female.	Total.
Maximum number of patients in residence (on the 31st of January)	120	116	236
Minimum " " " (on the 31st of March)	119	112	231
Collective days' stay of all patients in residence during year	43926	41172	85097
Daily average population	120.34	212.80	233.14

	Admissions of Year.			Total Admissions since Opening.		
	Male.	Female.	Total.	Male.	Female.	Total.
SOCIAL STATE.						
Married					4	4
Widowed						
Single	15	9	24	190	166	356
Not reported						
Total	15	9	24	190	170	360
RELIGION OF PARENTS.						
Presbyterians	4	2	6	35	26	61
Episcopalians	3	3	6	34	39	73
Methodists	4	1	5	42	46	88
Baptists		2	2	3	7	10
Roman Catholics	3		3	28	22	50
Mennonites	1		1	3	3	6
Quakers				2	1	3
Other denominations		1	1	4	2	6
Not reported				39	24	63
Total	15	9	24	190	170	360
NATIONALITIES.						
English	2	1	3	14	16	30
Irish				21	17	38
Scotch	1	1	2	18	9	27
Canadian	12	7	19	110	109	219
United States				1	1	2
Other countries				10	6	16
Unknown				16	12	28
Total	15	9	24	190	170	360

TABLE. NO. 3.

Shewing the Counties from which Patients have been admitted up to 30th September, 1883.

COUNTIES.	Admitted during Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Brant				4	2	6
Bruce				4	6	10
Carleton	1		1	7	3	10
Elgin				1	6	7
Essex				2	4	6
Frontenac				8	14	22
Grey				11	6	17
Haldimand	1		1	6	3	9
Halton	1		1	4	3	7
Hastings		1	1	1	4	5
Huron				10	6	16
Kent		1	1	3	6	9
Lambton	1		1	4	4	8
Lanark	1		1	4	2	6
Leeds and Grenville				7	1	8
Lennox and Addington	1		1	4	2	6
Lincoln				4	1	5
Middlesex		1	1	7	7	14
Muskoka District	2		2	2	2	4
Norfolk				5	3	8
Northumberland and Durham		1	1	8	8	16
Ontario	1	1	2	9	7	16
Oxford	1		1	4	4	8
Peel				1	4	5
Perth				5	2	7
Peterborough					2	2
Prince Edward	1		1	1	2	3
Renfrew		1	1		6	6
Simcoe	2		2	9	8	17
Stormont, Dundas and Glengarry				4	1	5
Victoria	1		1	5	3	8
Waterloo	1		1	5	4	9
Welland				1		1
Wellington				7	2	9
Wentworth		1	1	9	10	19
York		2	2	24	22	46
Total admissions	15	9	24	190	170	360

TABLE NO. 4.

Shewing the Counties from which Warrant Cases have been admitted up to 30th September, 1883.

COUNTIES.	Admitted during Year.			Total Admissions.		
	Male.	Female.	Total.	Male.	Female.	Total.
Brant				1		1
Bruce				2	2	4
Carleton				2	3	5
Elgin					4	4
Essex				1	2	3
Frontenac				7	9	16
Grey				5	3	8
Haldimand				1		1
Halton					1	1
Hastings					2	2
Huron				4	1	5
Kent					3	3
Lambton				1	1	2
Lanark				3	1	4
Leeds and Grenville				4	1	5
Lennox and Addington				2	2	4
Lincoln				2	1	3
Middlesex				3		3
Muskoka District	1		1	1		1
Norfolk				4	3	7
Northumberland and Durham				4	2	6
Ontario				3		3
Oxford				2	1	3
Peel				1	1	2
Perth				3	1	4
Renfrew					4	4
Simcoe				2	3	5
Stormont, Dundas and Glengarry				3		3
Victoria				2		2
Waterloo				1		1
Wellington				1		1
Wentworth				1	5	6
York				6	1	7
Total admissions	1		1	72	57	129

TABLE No. 5.

Shewing the Length of Residence in the Asylum of those discharged during the year.

No.	Initials.	Sex.	When Admitted.	When Discharged.	Remarks.
260	R. McM.	M.	Aug. 18th, 1882	Oct. 10th, 1882	Taken home by parents.
248	J. A. R.	F.	Nov. 12th, 1881	Mar. 13th, 1883	" " "
242	C. G. C.	M.	June 30th, "	July 1st, "	" " "
340	J. L.	F.	Dec. 5th, 1882	" 2nd, "	" " "
355	R. McK	M.	July 7th, 1883	Sept. 7th, "	" " "

TABLE No. 6.

Shewing Age, Length of Residence, and Proximate Cause of Death of those who died during the year ending 30th September, 1883.

No.	Initials.	Sex.	Age.	Date of Death.	Residence in Asylum.			Proximate Cause of Death.
					Years.	Months.	Days.	
336	J. R. L.	M.	25	Nov. 14th, 1882			23	General Debility.
307	E. C.	M.	69	Jan. 11th, 1883		4	2	Senile Decay,
70	J. B. K.	M.	19	" 20th, "	6	3	14	General Debility.
15	N. R.	F.	23	Feb. 1st, "	6	4	5	Phthisis.
35	S. McC.	F.	43	" 6th, "	6	4	11	Paralysis.
323	J. E. McG.	M.	24	" 13th, "		4	24	Congestion of Lungs.
197	J. S.	F.	39	" 19th, "	4	1	11	General Debility.
310	C. K.	M.	47	" 24th, "		5	4	Dropsy.
257	E. W.	F.	9	" 26th, "		7	26	Bronchitis.
97	E. P.	F.	52	" 27th, "	6	3	10	Epilepsy.
199	M. C. C.	M.	27	Apr. 23rd, "	4		23	General Debility.
185	E. J.	M.	14	May 14th, "	5			Dropsy.
202	J. C. J.	F.	15	" 15th, "	4	1	6	Phthisis.
351	C. H.	F.	74	" 18th, "		1		Old Age.
219	I. F.	F.	31	June 11th, "	3	5	2	Biliary Calculi.
238	M. E. S.	F.	10	July 1st, "	2	3	19	Softening of Brain.
187	A. R.	F.	22	" " "	5	1	14	Enteric Fever.
47	F. F.	M.	24	Aug. 11th, "	6	10	20	Paresis.
147	E. G.	F.	34	" 18th, "	6	2	18	Epilepsy.
158	M. A.	F.	55	Sept. 3rd, "	6	1	20	Epilepsy.

TABLE NO. 7.

Shewing the nature of Employment and the number of day's work performed by Patients during the year ending 30th September, 1883.

NATURE OF EMPLOYMENT.	Number of Patients who worked.	Days Worked.		
		Male.	Female.	Total.
Carpenter's Shop	1	156	....	156
Engineer's Shop	1	313	....	313
Wood Yard and Coal Shed	12	3756	....	3756
Laundry	4	626	626	1252
Garden	3	420	.....	420
Grounds	2	312	.....	312
Stable	1	365	.....	365
Kitchen	5	620	1080	1700
Dining Rooms	8	626	1252	1878
Officers' Quarters	1	365	.....	365
Sewing Rooms	3	....	930	930
Wards	28	2555	7665	10220
General	10	3130	....	3130
Total	79	13244	11553	24797

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